STIC Search Report
EIC 2600

USPTO

STIC Database Tracking Number: 99069

TO: Julie Anne Watko **Location: PK 2 4R13** **Art Unit : 2652** **Monday, July 28, 2003** **Case Serial Number: 09/811606**	**From: Terri Beale** **Location: EIC 2600** **PK2-3T05** **Phone: 306-0254** **terrijor.beale@uspto.gov**

Search Notes

Dear Julie Anne Watko;

Attached please find the results of your search request 09/811606. Please feel free to contact me if you have questions or concerns. Thank you and have a great day.

Please take a moment and fill out the attached feedback form. Thank you.

sira
Search and Information Resources Administration

File 348:EUROPEAN PATENTS 1978-2003/Jul W03
(c) 2003 European Patent Office
File 349:PCT FULLTEXT 1979-2002/UB=20030724,UT=20030717
(c) 2003 WIPO/Univentio

Set	Items	Description
S1	39429	MAGNETORESISTIV? OR MR OR GMR
S2	917588	SENSOR? OR HEAD? OR ELEMENT? OR MRAM OR MAGNETIC?()RAM
S3	834213	FILM? OR THINFILM? OR LAYER? OR OVERLAY? OR OVERLAID? OR LAMIN? OR LAMEL? OR MULTILAYER? OR SHEET OR LEAF? OR FOIL? OR COAT? OR TOPCOAT?
S4	527346	OVERCOAT? OR VENEER? OR SHEATH? OR COVER? OR ENVELOP? OR ENCAS? OR ENWRAP? OR OVERSPREAD? OR UNDERLAY? OR UNDERLAID?
S5	866	BARKHAUSEN(2N)NOISE OR MBN OR DOMAIN()CONTROL? OR LONGITUDINAL?()BIAS
S6	130	10()M()CM OR MILLI()OHM()CENTIMETER? OR M()OHM()CM
S7	275215	SIO2 OR SI02 OR GLASS OR SILICON()DIOXIDE
S8	136	COCRPT
S9	1015964	S3 OR S4
S10	2711	S1(3N)S2
S11	131	S5(5N)S9
S12	7	S10(S)S11(S)(S7 OR S8)
S13	0	S12(S)S6
S14	68	S10(S)S11
S15	0	S14(S)S6
S16	19	S14/TI,AB,CM
S17	15	S16 NOT S12
S18	1	S1(S)S11(S)S7(S)S8
S19	1	S18 NOT (S12 OR S17)
S20	2	S5(S)S7(S)S8
S21	1	S20 NOT (S19 OR S17 OR S12)

12/5,K/1 (Item 1 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

01599521
Magnetoresistive film
Magnetoresistives Element
Film magnetoresistif
PATENT ASSIGNEE:
FUJITSU LIMITED, (211463), 1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki-shi, Kanagawa 211-8588, (JP), (Applicant designated States: all)
INVENTOR:
Noma, Kenji, c/o Fujitsu Limited, 1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki-shi, Kanagawa 211-8588, (JP)
LEGAL REPRESENTATIVE:
Fenlon, Christine Lesley et al (61591), Haseltine Lake & Co., Imperial House, 15-19 Kingsway, London WC2B 6UD, (GB)
PATENT (CC, No, Kind, Date): EP 1324356 A1 030702 (Basic)
APPLICATION (CC, No, Date): EP 2002258894 021223;
PRIORITY (CC, No, Date): JP 2001391047 011225
DESIGNATED STATES: AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE; SI; SK; TR
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO
INTERNATIONAL PATENT CLASS: H01F-010/32; G11B-005/39

ABSTRACT EP 1324356 A1
A magnetoresistive film (41) includes a pinned ferromagnetic layer (53), a free ferromagnetic layer (57), an intermediate layer (56) interposed between the pinned (53)and free ferromagnetic (57) layers, and a pinning layer (52) contacting the pinned ferromagnetic layer (53). The free ferromagnetic layer (57) is made of a ferromagnetic layered material including a cobalt nickel iron alloy layer (57b), and a cobalt iron alloy layer (57a) laid over the cobalt nickel iron alloy layer (57b). It has been demonstrated that the cobalt nickel iron alloy layer (57b) serves to reliably establish uniaxial magnetic anisotropy in the cobalt iron alloy layer (57a). Moreover, even if the thickness of the cobalt nickel iron alloy layer (57b) as well as the cobalt iron alloy layer (57a) is reduced, the uniaxial magnetic anisotropy can surely be maintained in the ferromagnetic layered material (57).
ABSTRACT WORD COUNT: 141
NOTE:
Figure number on first page: 5

LEGAL STATUS (Type, Pub Date, Kind, Text):
Application: 030702 A1 Published application with search report
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	200327	496
SPEC A	(English)	200327	4880
Total word count - document A			5376
Total word count - document B			0
Total word count - documents A + B			5376

...SPECIFICATION to intersect, by an inclined angle (theta), the flat surface of the non-magnetic gap **layer** 34.
Likewise, a pair of **domain control** hard magnetic films 42 are formed to extend along the air bearing surface 28 over...

...hard magnetic films 42 may be made of a hard magnetic material such as CoPt, **CoCrPt** , or the like.
Lead layers 43 are formed to extend over the surface of the...

12/5,K/2 (Item 2 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00884207
Magnetic head and magnetic disk apparatus provided therewith
Magnetkopf und Plattenlaufwerk mit demselben
Tete magnetique et appareil l'utilisant
PATENT ASSIGNEE:
Hitachi, Ltd., (204141), 6, Kanda Surugadai 4-chome, Chiyoda-ku, Tokyo 101, (JP), (Proprietor designated states: all)
INVENTOR:
Imagawa, Takao, 3-18 Yurigaoka-cho, Mito-shi, Ibaraki-ken 311-11, (JP)
Tadokoro, Shigeru, No. 501 Kozu-daini-apato, 2400 Kozu, Odawara-shi, Kanagawa-ken 256, (JP)
Tajima, Yasunari, No. B-104 Naito-haitsu, 722-5 Nakazato, Ninomiya-machi, Naka-gun, Kanagawa-ken 259-01, (JP)
Kamio, Hiroshi, 183 Iidaoka, Odawara-shi, Kanagawa-ken 250, (JP)
LEGAL REPRESENTATIVE:
Hackney, Nigel John et al (76991), Mewburn Ellis, York House, 23 Kingsway , London WC2B 6HP, (GB)
PATENT (CC, No, Kind, Date): EP 809237 A1 971126 (Basic)
EP 809237 B1 010816
APPLICATION (CC, No, Date): EP 97303307 970515;
PRIORITY (CC, No, Date): JP 96124335 960520
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: G11B-005/31; G11B-005/39
CITED PATENTS (EP B): EP 669607 A; JP 8115511 A; US 4755897 A
CITED REFERENCES (EP B):
PATENT ABSTRACTS OF JAPAN vol. 096, no. 009, 30 September 1996 & JP 08 115511 A (HITACHI LTD)
IEEE TRANSACTIONS ON MAGNETICS, SEPT. 1988, USA, vol. 24, no. 5, ISSN 0018-9464, pages 2215-2220, XP002035282 MIURA M ET AL: "Annealing behavior of magnetic anisotropy in CoNbZr films";

ABSTRACT EP 809237 A1
A magnetic head having a magnetoresistive head having a spin valve structure in which a composite magnetic layer of a rotatable magnetizing direction layer and oxide or the like is used for a lower shielding layer (10) and/or an upper shielding layer (90) and a magnetic disk apparatus using such a head are disclosed. According to the invention, a magnetic head having a head of a magnetoresistance effect type generating a high output with low noises and a magnetic disk apparatus having a large quantity with high recording density can be realized, if the material of the shielding layers has a low activation energy to change its magnetic anisotropy.
ABSTRACT WORD COUNT: 110
NOTE:
Figure number on first page: 1

LEGAL STATUS (Type, Pub Date, Kind, Text):
Change: 000531 A1 Title of invention (German) changed: 20000407
Application: 971126 A1 Published application (A1with Search Report ;A2without Search Report)
Oppn None: 020807 B1 No opposition filed: 20020517
Change: 001018 A1 Title of invention (French) changed: 20000828
Change: 001018 A1 Title of invention (German) changed: 20000828
Change: 000531 A1 Title of invention (French) changed: 20000407
Grant: 010816 B1 Granted patent
Examination: 971126 A1 Date of filing of request for examination: 970604
Examination: 990602 A1 Date of despatch of first examination report: 990416
LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	199711W3	1526
CLAIMS B	(English)	200133	227
CLAIMS B	(German)	200133	225
CLAIMS B	(French)	200133	265
SPEC A	(English)	199711W3	4472
SPEC B	(English)	200133	4536
Total word count - document A			6000
Total word count - document B			5253
Total word count - documents A + B			11253

...SPECIFICATION invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT
Fig. 1 shows an embodiment in which a **magnetoresistive head** using the composite magnetic film is fabricated. A composite magnetic film of 2 (mu)m obtained by adding 4 mol% of **SiO2**)) to NiFe is formed and used as a lower shielding layer 10. The surface roughness...

...and coupled by a heat treatment with field applied to the height direction of the **MR sensor** at 260(degree)C for four hours. A magnetic **domain control film** 60 and an electrode 70 are formed by a hard bias structure. Al2))O3)) of...

...formed by plating. The magnetic field is first applied to the height direction of the **MR sensor** and magnetization is oriented to the magnetic path of the write head

...SPECIFICATION invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT
Fig. 1 shows an embodiment in which a **magnetoresistive head** using the composite magnetic film is fabricated. A composite magnetic film of 2 (mu)m obtained by adding 4 mol% of **SiO2**)) to NiFe is formed and used as a lower shielding layer 10. The surface roughness...

...and coupled by a heat treatment with field applied to the height direction of the **MR sensor** at 260(degree)C for four hours. A magnetic **domain control film** 60 and an electrode 70 are formed by a hard bias structure. Al2))O3)) of...formed by plating. The magnetic field is first applied to the height direction of the **MR sensor** and magnetization is oriented to the magnetic path of the write head and is turned...

12/5,K/3 (Item 3 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00818661
Magnetoresistive head, manufacturing method of the head and magnetic recording/reproducing drive
Magnetoresistiver Kopf, Herstellungsverfahren dafur und Magnetaufzeichnungs -/-wiedergabelaufwerk
Tete magnetoresistive, methode de fabrication de la tete et entrainement d'enregistrement/de reproduction magnetique
PATENT ASSIGNEE:
FUJITSU LIMITED, (211463), 1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki-shi, Kanagawa 211-8588, (JP), (Proprietor designated states: all)
INVENTOR:
Mimura, Takashi, Fujitsu Ltd., 1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki-shi, Kanagawa 211, (JP)
LEGAL REPRESENTATIVE:

Seeger, Wolfgang, Dipl.-Phys. (11006), Georg-Hager-Strasse 40, 81369 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 762389 A1 970312 (Basic)
EP 762389 B1 011017
APPLICATION (CC, No, Date): EP 96111230 960712;
PRIORITY (CC, No, Date): JP 95222940 950831
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: G11B-005/39
CITED PATENTS (EP B): EP 314343 A; EP 634740 A; US 4755897 A; US 4809109 A; US 5258884 A; US 5438470 A
CITED REFERENCES (EP B):
PATENT ABSTRACTS OF JAPAN vol. 95, no. 001 & JP-A-07 014125 (NGK INSULATORS LTD), 17 January 1995,
PATENT ABSTRACTS OF JAPAN vol. 95, no. 008 & JP-A-07 220246 (HITACHI LTD), 18 August 1995,
PATENT ABSTRACTS OF JAPAN vol. 95, no. 004 & JP-A-07 098822 (HITACHI LTD), 11 April 1995,;

ABSTRACT EP 762389 A1

A magnetoresistive head is composed of a soft magnetic layer (22) formed on a substrate (21), a magnetic isolation layer (23) formed on the soft magnetic layer (22), a magnetoresistive layer (24) formed on the magnetic isolation layer (23), and a magnetic domain controlling magnetic layer (25), which is made of an anti-ferromagnetic layer or a hard ferromagnetic layer having a magnetically non-active thickness, for covering a sense region (S) of the magnetoresistive layer (24). Accordingly, because the magnetic domain controlling magnetic layer (25) grows on the magnetoresistive layer (24) in succession to the growth of the magnetoresistive layer (24), there is no probability that a natural oxide is produced in a boundary region between the magnetoresistive layer (24) and the magnetic domain controlling magnetic layer (25). Also, there is no probability that a film thickness of the magnetoresistive layer placed under the magnetic domain controlling magnetic layer (25) changes. Therefore, an exchange coupling magnetic field of the magnetic domain controlling magnetic layer (25) for the magnetoresistive layer (24) can be stabilized, a Barkhausen noise can be suppressed, and a superior magnetoresistive effect characteristic can be stably obtained.
ABSTRACT WORD COUNT: 189
NOTE:
Figure number on first page: 3E

LEGAL STATUS (Type, Pub Date, Kind, Text):
Grant: 011017 B1 Granted patent
Examination: 20000308 A1 Date of dispatch of the first examination report: 20000124
Oppn None: 021009 B1 No opposition filed: 20020718
Application: 970312 A1 Published application (A1with Search Report ;A2without Search Report)
Examination: 971029 A1 Date of filing of request for examination: 970903
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPAB97	1409
CLAIMS B	(English)	200142	272
CLAIMS B	(German)	200142	248
CLAIMS B	(French)	200142	312
SPEC A	(English)	EPAB97	6441
SPEC B	(English)	200142	5491
Total word count - document A			7851
Total word count - document B			6323
Total word count - documents A + B			14174

...SPECIFICATION 25 are made of NiMn, the same action and effect can be obtained in the **magnetoresistive head** . Also, a hard magnetic film

made of Co, Cr, CoPt or **CoCrPt** can be used as the magnetic **domain controlling** magnetic **layer** 15 or 25 for controlling a magnetic domain of the sense region S of the...

...SPECIFICATION 25 are made of NiMn, the same action and effect can be obtained in the **magnetoresistive head** . Also, a hard magnetic film made of Co, Cr, CoPt or **CoCrPt** can be used as the magnetic **domain controlling** magnetic **layer** 15 or 25 for controlling a magnetic domain of the sense

12/5,K/4 (Item 4 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00660000
Magnetoresistive read transducer
Magnetoresistiver Lesewandler
Transducteur magnetoresistif de lecture
PATENT ASSIGNEE:
International Business Machines Corporation, (200120), Old Orchard Road, Armonk, N.Y. 10504, (US), (Proprietor designated states: all)
INVENTOR:
Chen, Mao-Min, 1025 Woodview Place, San Jose, California 95120, (US)
Fontana, Robert Edward, 6596 Northridge Drive, San Jose, California 95120, (US)
Krounbi, Mohamad Towfik, 6238 Paso Los Cerritos, San Jose, California 95120, (US)
Kung, Kenneth Ting-Yuan, 6168 Paseo Pueblo Drive, San Jose, California 95120, (US)
Lee, James Hsi-Tang, 1169 Valley Quail Circle, San Jose, California 95120, (US)
Lo, Jyh-Shliey Jerry, 7018 Noonwood Ct., San Jose, California 95120, (US)
Tsang, Ching Hwa, 882 Helena Drive, Sunnyvale, California 94087, (US)
Wang, Po-Kang, 1007 Shadow Brook Drive, San Jose, California 95120, (US)
LEGAL REPRESENTATIVE:
Bailey, Geoffrey Alan (27921), IBM United Kingdom Limited Intellectual Property Department Hursley Park, Winchester Hampshire SO21 2JN, (GB)
PATENT (CC, No, Kind, Date): EP 634740 A2 950118 (Basic)
EP 634740 A3 960131
EP 634740 B1 990922
APPLICATION (CC, No, Date): EP 94304883 940704;
PRIORITY (CC, No, Date): US 90714 930713
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: G11B-005/39
CITED PATENTS (EP B): EP 279536 A; EP 298417 A; EP 422806 A; EP 441581 A; EP 558237 A
CITED REFERENCES (EP B):
PATENT ABSTRACTS OF JAPAN vol. 013 no. 162 (P-859) ,19 April 1989 & JP-A-64 001112 (HITACHI LTD) 5 January 1989,;

ABSTRACT EP 634740 A2
An MR transducer (70) is disclosed having passive end regions (71) separated by a central active region (77) in which an MR layer (81) is formed over substantially only the central active region and in which a magnetic bias layer (75,79) is formed in each passive end region. In one embodiment, each of the magnetic bias layers includes a layer of ferromagnetic material (79) and a layer of antiferromagnetic material (75) overlaying and in contact with the ferromagnetic layer to provide an exchange-coupled magnetic bias field. Alternatively a hard magnetic material is used to form the biasing layer. Each of the magnetic bias layers form an abutting junction (87) having magnetic and electrical continuity with the MR layer to produce a stable longitudinal magnetic bias field in the transducer, even when the length of the active region is small to accommodate small track widths. (see image in original

document)
ABSTRACT WORD COUNT: 171
NOTE:
Figure number on first page: 7

LEGAL STATUS (Type, Pub Date, Kind, Text):

Oppn None:	000906	B1	No opposition filed: 20000624
Application:	950118	A2	Published application (A1with Search Report ;A2without Search Report)
Examination:	950719	A2	Date of filing of request for examination: 950519
Search Report:	960131	A3	Separate publication of the European or International search report
Examination:	980401	A2	Date of despatch of first examination report: 980213
Grant:	990922	B1	Granted patent

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9938	856
CLAIMS B	(German)	9938	828
CLAIMS B	(French)	9938	970
SPEC B	(English)	9938	3831
Total word count - document A			0
Total word count - document B			6485
Total word count - documents A + B			6485

...SPECIFICATION is shown. The MR read transducer 30 comprises a layer of ferromagnetic material forming an **MR element** 31 which extends over substantially only a central active region 33 of the transducer and...

...35 formed in each end region 37 which forms an abutting junction 39 with the **MR element** 31 to produce a longitudinal magnetic bias field in the MR read transducer 30. Since the **MR element** 31 extends only over the central active region 33 of the transducer 30, additional side-reading suppression components are not required in this preferred embodiment. Thus, the **longitudinal bias layer** 35 in each end region 37 need only provide for electrical and magnetic continuity to the **MR element** 31. The **longitudinal bias layer** 35 may be a single layer of magnetically hard material such as cobalt-chromium (CoCr), cobalt-platinum (CoPt) or cobalt-chromium-platinum (**CoCrPt**), for example, although the use of under- and/or overcoats such as tungsten (W) or...

...Alternatively, the longitudinal bias field can be provided by ferromagnetic/antiferromagnetic exchange coupling wherein the **longitudinal bias layer** 35 comprises a **layer** 75 of antiferromagnetic material overlaying and in physical contact with a layer 79 of ferromagnetic material (as shown in Fig. 7). For example, the **longitudinal bias layer** 35 can comprise a bilayer of manganeseiron/nickel-iron (MnFe/NiFe) or a bilayer of...from which previously recorded magnetic data is to be read. The transducer 60 comprises an **MR element** 63 which extends over the central active region 65 of the transducer, and hard magnetic bias layers 67 which form abutting junction 69 with the **MR element** 63. The hard magnetic bias layers 67 extend over the end regions 61 of the transducer to produce a longitudinal magnetic bias field in the **MR element** 63. In this preferred embodiment, the **MR element** 63 can comprise a trilayer structure including a layer of ferromagnetic material, such as NiFe...
...the MR layer by the spacer layer and provides the transverse bias field for the **MR element** 63. The hard magnetic bias layers 67 comprise a single layer of a hard magnetic material, such as **CoCrPt** , for example. Since in the junction region 69 where the hard magnetic material overlaps and...

...lt; 0.1 (mu)m are suitable for use with transducers utilizing hard magnetic bias **layers** to produce the **longitudinal bias** field. To ensure good electrical reliability between the. **MR element** 63 and the bias layer 67, the undercut 51 of stencil 41 (as shown in...

...can be adjusted to provide some overlap 64 of the conductor leads 68 with the **MR element** 63.
Referring now also to Fig. 7, a cross-sectional view of a second embodiment...

12/5,K/5 (Item 5 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00602683
Magnetoresistive sensor
Magneto-resistiver Fuhler
Capteur magnetoresistif
PATENT ASSIGNEE:
International Business Machines Corporation, (200120), Old Orchard Road, Armonk, N.Y. 10504, (US), (Proprietor designated states: all)
INVENTOR:
Cain, William Charles, 5390 Landau Court, San Jose, California 95123, (US)
Dieny, Bernard, CNRS 166X 38042, Grenoble Credex, (FR)
Fontana, Robert Edward, Jr., 6596 Northridge Drive, San Jose, California 95120, (US)
Speriosu, Virgil Simon, 351 St. Julie Drive, San Jose, California 95119, (US)
LEGAL REPRESENTATIVE:
Burt, Roger James, Dr. (52152), IBM United Kingdom Limited Intellectual Property Department Hursley Park, Winchester Hampshire SO21 2JN, (GB)
PATENT (CC, No, Kind, Date): EP 598581 A2 940525 (Basic)
EP 598581 A3 951004
EP 598581 B1 990908
APPLICATION (CC, No, Date): EP 93309110 931115;
PRIORITY (CC, No, Date): US 977382 921117
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: G11B-005/39
CITED PATENTS (EP B): EP 326192 A; US 3921217 A; US 4833560 A; US 5159513 A
CITED REFERENCES (EP B):
MATERIALS SCIENCE AND ENGINEERING B, vol. B03, no. 4, 1 September 1989 pages 377-381, XP 000084685 GAU J -S 'MAGNETIC THIN FILM DEVICES'
IEEE TRANSACTIONS ON MAGNETICS, vol. 29, no. 6, November 1993 NEW YORK US, pages 3820-3822, WANG P.-K. ET AL. 'Sensitivity of Orthogonal Magnetoresistive Heads'
IEEE TRANSLATION JOURNAL ON MAGNETICS IN JAPAN, vol. 8, no. 4, April 1993 NEW YORK US, pages 260-268, YAMADA K. 'Magnetoresitive Head for High Density Magnetic Recording';

ABSTRACT EP 598581 A2
A magnetoresistive sensor based on the spin valve effect in which a component of the read element resistance varies as the cosine of the angle between the magnetization directions in two adjacent magnetic layers is described. The sensor read element includes two adjacent ferromagnetic layers (33,37) separated by a non-magnetic metallic layer, the magnetic easy axis of each of the ferromagnetic layers being aligned along the longitudinal axis of the ferromagnetic layers and perpendicular to the trackwidth of an adjacent magnetic storage medium. The sense current flowing in the sensor element generates a bias field which sets the direction of magnetization in each ferromagnetic layer at an equal, but opposite, angle (theta) with respect to the magnetic easy axis thus providing an angular separation of 2(theta) in the absence of an applied magnetic signal. The magnetizations of both ferromagnetic layers are

responsive to an applied magnetic field to change their angular separation by an amount 2(delta)(theta). (see image in original document)

ABSTRACT WORD COUNT: 163
NOTE:
Figure number on first page: 3

LEGAL STATUS (Type, Pub Date, Kind, Text):

Oppn None:	000823	B1	No opposition filed: 20000609
Application:	940525	A2	Published application (A1with Search Report ;A2without Search Report)
Examination:	941123	A2	Date of filing of request for examination: 940927
Search Report:	951004	A3	Separate publication of the European or International search report
Examination:	970205	A2	Date of despatch of first examination report: 961219
Grant:	990908	B1	Granted patent

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9936	969
CLAIMS B	(German)	9936	969
CLAIMS B	(French)	9936	1079
SPEC B	(English)	9936	3805
Total word count - document A			0
Total word count - document B			6822
Total word count - documents A + B			6822

...SPECIFICATION may support a number of sliders.
Referring now to Figs. 2, 3 and 4, an **MR** spin valve **sensor** according to the principles of the present invention comprises a first thin film layer 33...

...and a second thin film layer 37 of magnetically soft ferromagnetic material to form an **MR element** 30 deposited on a suitable substrate 31 such as **glass** , ceramic or a semiconductor, for example. A bias conductor 43 is formed over the **MR element** 30 to provide a longitudinal bias field which ensures a single magnetic domain state in the active region of the magnetic **layers** 33, 37 to minimize **Barkhausen noise** . The bias conductor 43 is electrically isolated from the **MR element** 30 by an insulation layer of suitable material. The bias conductor is oriented with respect to the **MR element** 30 such that a current flow through the bias conductor generates a magnetic field in the **MR element** parallel to the magnetic easy axis. Electrical leads 39 and 41 of a suitable conductive material deposited over the end regions of the **MR element** 30 are provided to form a circuit path between the **MR sensor** and a current source 57 and a signal sensing means 55.
During fabrication, the magnetic...underlayer 59. Electrical leads 39, 41 are provided to form a circuit path between the **MR sensor** and a current source 57 and a signal sensing means 55. As described above, the **MR element** 30 is physically oriented such that its longitudinal axis, and hence the magnetic easy axis...

...bearing surface ABS with the read trackwidth being defined by the end width of the **MR element** exposed at the ABS. In order to reduce **Barkhausen noise** , a **longitudinal bias layer** 42 is deposited over one end of the **MR element** 30 remote from the ABS of the sensor. The bias layer can be of an...
...described with reference to Fig. 2, a bias conductor 42 can be formed over the **MR element** 30 separated therefrom by an insulating layer (not shown) of suitable material, such as **silicon dioxide** (**SiO2**))) or the like. A capping layer (not shown) of a high resistivity material such as Ta or Zr, for example, can also be deposited over the **MR sensor** .

As described above, the two ferromagnetic layers 33, 37 have their magnetizations oriented parallel both...

12/5,K/6 (Item 6 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00601334
Magnetic sensor.
Magnetischer Sensor.
Senseur magnetique.
PATENT ASSIGNEE:
International Business Machines Corporation, (200120), Old Orchard Road, Armonk, N.Y. 10504, (US), (applicant designated states: DE;FR;GB)
INVENTOR:
Chen, Mao-Min, 1025 Woodview Place, San Jose, California 95120, (US)
Kung, Kenneth Ting-Yuan, 6168 Paseo Pueblo Drive, San Jose, California 95120, (US)
Lee, Rodney Edgar, 17845 Northwood Place, Salinas, California 93907, (US)
Robertson, Neil Leslie, 1125 Bent Drive, Campbell, California 95008, (US)
LEGAL REPRESENTATIVE:
Burt, Roger James, Dr. (52152), IBM United Kingdom Limited Intellectual Property Department Hursley Park, Winchester Hampshire SO21 2JN, (GB)
PATENT (CC, No, Kind, Date): EP 590905 A2 940406 (Basic)
EP 590905 A3 950705
APPLICATION (CC, No, Date): EP 93307625 930927;
PRIORITY (CC, No, Date): US 955820 921002
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: G11B-005/39;

ABSTRACT EP 590905 A2
A magnetoresistive (MR) sensor having electrically conductive lead structures (41) for electrically connecting the MR element with external circuitry is described. The lead structures comprise a first or principal conductive layer (38) overlying the MR element (32) or bias layers in the end regions of the MR sensor and extending to the air bearing surface (ABS) (31) of the sensor. A second conductive layer (36) is deposited over the first conductive layer and extends from a point (44) on the first conductive layer which is offset or recessed from the sensor ABS. The second conductive layer increases the thickness of the sensor lead structures thus reducing the total resistance of the lead structures. Since the second conductive layer is not exposed at the sensor ABS, mechanical and electrochemical requirements for the conductive materials are greatly lessened allowing a wide selection of conductive material choices for the second conductive layer. (see image in original document)

ABSTRACT WORD COUNT: 156

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application:	940406 A2	Published application (A1with Search Report ;A2without Search Report)
Examination:	941019 A2	Date of filing of request for examination: 940819
Search Report:	950705 A3	Separate publication of the European or International search report
Examination:	970205 A2	Date of despatch of first examination report: 961223
Withdrawal:	971029 A2	Date on which the European patent application was deemed to be withdrawn: 970503

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF2	896
SPEC A	(English)	EPABF2	4213

Total word count - document A 5109
Total word count - document B 0
Total word count - documents A + B 5109

...SPECIFICATION to Figs. 5 and 6, a second embodiment of the present invention is shown. The **MR** read **sensor** 50 comprises an **MR** layer 54 which extends over substantially only the central active region 56 of the sensor...
...bias layer 53 in each end region 58 forms an abutting junction with the MR **layer** 54 to produce **longitudinal bias** in the **MR** read **sensor** 50. Electrically conductive leads 52 comprising first or principal current-carrying lead structures 55 and...

...conductive layers 57 deposited on a major surface of the principal lead structures couple the **MR sensor** 50 to external circuitry (as shown in Fig. 1). In contrast to that described above...

...with a single layer of metallurgy such as cobalt (Co), Cr, cobalt-platinum (CoPt) or **CoCrPt** , for example, although the use of under- and/or overcoats such as tungsten (W) or...

...layer 54.
Referring now to Figs. 7 and 8, a specific embodiment 70 of the **MR sensor** 50 shown in Figs. 5 and 6 and an embodiment of a process for fabricating the **MR sensor** 70 are shown. The process comprises the steps of depositing, upon a suitable substrate (not...

...NiFe or Sendust (AlSiFe), a first gap layer 73 of an insulting material, such as **silicon dioxide** (SiO(sub 2)) or alumina (Al(sub 2)O(sub 3)), and a sensor layer...
...layer 75 as the sensor trilayer blanket material is removed in the regions that will **underlay** the **longitudinal bias layer** 79 and the first conductive lead 81 by a subtractive process such as sputter etching at Fig. 7c. The material for the **longitudinal bias layer** 79, which preferably is a hard bias layer but may alternatively be an exchange bias ...

...along with the stencil mask by the liftoff process to produce a sensor 70 having **longitudinal bias layers** 79 with overlying first conductive leads 81 in the sensor end regions only, each of the **longitudinal bias layers** 79 having a contiguous junction with the sensor trilayer structure 75 which extends over only...

...deposition and metal liftoff techniques, in a manner similar to the process for forming the **longitudinal bias layer** 79 and first conductive lead 81, as shown in Fig. 7f. As described with reference...

...the first conductive lead remote or recessed from the sensor ABS 85. To complete the **MR sensor** 70, the second gap layer 87 and second magnetic shield layer 89 are formed by...

12/5,K/7 (Item 7 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00308734
Head comprising a magnetoresistive sensor.
Kopf mit einem magnetoresistiven Aufnehmer.
Tete compressant un detecteur magnetoresistif.
PATENT ASSIGNEE:
SEAGATE TECHNOLOGY INTERNATIONAL, (1229491), c/o Maples & Calder, P.O. Box 309, Georgetown, Grand Cayman Island, (KY), (applicant designated states: DE;FR;GB)
INVENTOR:

Mowry, Greg Stephen, 13905 James Avenue South, Burnsville Minnesota 55337 , (US)
LEGAL REPRESENTATIVE:
Kenyon, Sarah Elizabeth et al (62342), J. Miller & Co. 34 Bedford Row Holborn, London WC1R 4JH, (GB)
PATENT (CC, No, Kind, Date): EP 279535 A2 880824 (Basic)
EP 279535 A3 900110
EP 279535 B1 930714
APPLICATION (CC, No, Date): EP 88300683 880127;
PRIORITY (CC, No, Date): US 15200 870217
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: G11B-005/39; G01R-033/06;
CITED PATENTS (EP A): GB 2054940 A; GB 2054940 A; US 4103315 A; GB 2146482 A; EP 100841 A; US 3953888 A; GB 2109992 A
CITED REFERENCES (EP A):
PATENT ABSTRACTS OF JAPAN
JOURNAL OF PHYSICS E-SCIENTIFIC INSTRUMENTS;

ABSTRACT EP 279535 A2
A non-linear magnetoresistive sensor comprises a magnetoresistive strip having a central sense current region (L) and a pair of lateral extensions (12,14), two electrical contacts one each electrically contacting the extensions and having uncanted surfaces adjacent the central sense current region, said surfaces being parallel to each other, and no transverse biasing means.
ABSTRACT WORD COUNT: 57

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application:	880824	A2	Published application (A1with Search Report ;A2without Search Report)
Search Report:	900110	A3	Separate publication of the European or International search report
Examination:	900808	A2	Date of filing of request for examination: 900615
Change:	910123	A2	Representative (change)
*Assignee:	910123	A2	Applicant (transfer of rights) (change): SEAGATE TECHNOLOGY INTERNATIONAL (1286760) c/o Maples & Calder P.O. Box 309 Georgetown Grand Cayman Island (KY) (applicant designated states: DE;FR;GB)
*Assignee:	910123	A2	Previous applicant in case of transfer of rights (change): MAGNETIC PERIPHERALS INC. (404920) 8100-34th Avenue South Minneapolis Minnesota 55440 (US) (applicant designated states: DE;FR;GB)
Change:	910313	A2	Representative (change)
*Assignee:	910424	A2	Applicant (transfer of rights) (change): SEAGATE TECHNOLOGY INTERNATIONAL (1229491) c/o Maples & Calder, P.O. Box 309 Georgetown, Grand Cayman Island (KY) (applicant designated states: DE;FR;GB)
Change:	910828	A2	Representative (change)
Examination:	920226	A2	Date of despatch of first examination report: 920114
Change:	920812	A2	Representative (change)
Grant:	930714	B1	Granted patent
Oppn None:	940706	B1	No opposition filed

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	889
CLAIMS B	(German)	EPBBF1	435
CLAIMS B	(French)	EPBBF1	506
SPEC B	(English)	EPBBF1	4537

Total word count - document A 0

Total word count - document B 6367
Total word count - documents A + B 6367

...SPECIFICATION is laid down, preferably of NiFe (Permalloy). This layer 72 comprises a trailing pole/shield. **Next , a** write gap oxide **layer** 75 of, for example, aluminium oxide or **silicon dioxide** , is deposited followed by a second layer 74 of polyimide or photo resist. Metal coils ...

...fringing fields originating during the writing process. This makes the leading and trailing poles/shields **79 , 72** of different lengths. However, it has been discovered that this does not affect the written...
...easy axis magnetisation vector or the canting of the current vector. Canting of the magnetisation **vector typically** increases anisotropy and reduces the range of resistivity change and thus sensitivity of the magnetoresistive...

17/5,K/1 (Item 1 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

01276076
Magnetic tunnel junction element, tunneling magnetoresistive head, and production methods
Bauteil mit magnetischem Tunnelkontakt, magnetoresistiver Kopf mit Tunneleffekt und Herstellungsverfahren
Element magnetique a jonction de tunnel, tete magnetoresistive a effet tunnel et procedes de fabrication
PATENT ASSIGNEE:
SONY CORPORATION, (214022), 7-35, Kitashinagawa 6-chome Shinagawa-ku, Tokyo, (JP), (Applicant designated States: all)
INVENTOR:
Sugawara, Junichi, c/o Sony Corporation, 7-35, Kitashinagawa 6-chome, Shinagawa-ku, Tokyo, (JP)
Nakashio, Eiji, c/o Sony Corporation, 7-35, Kitashinagawa 6-chome, Shinagawa-ku, Tokyo, (JP)
Kumagai, Seiji, c/o Sony Corporation, 7-35, Kitashinagawa 6-chome, Shinagawa-ku, Tokyo, (JP)
LEGAL REPRESENTATIVE:
MULLER & HOFFMANN Patentanwalte (101521), Innere Wiener Strasse 17, 81667 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 1098203 A2 010509 (Basic)
APPLICATION (CC, No, Date): EP 123750 001031;
PRIORITY (CC, No, Date): JP 99314291 991104
DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS: G01R-033/09; G11B-005/39

ABSTRACT EP 1098203 A2
The present invention suppresses generation of the Barkhausen noise by providing a magnetic tunnel junction element including: a first magnetic layer having magnetization fixed in a predetermined direction, an insulation layer formed on the first magnetic layer, and a second magnetic layer formed on the insulation layer and changing its magnetization direction according to an external magnetic field, wherein the second magnetic layer is provided with non-conducting magnetic domain control films formed at both end portions on the second magnetic layer.
ABSTRACT WORD COUNT: 82
NOTE:
Figure number on first page: 1

LEGAL STATUS (Type, Pub Date, Kind, Text):
Application: 010509 A2 Published application without search report
Withdrawal: 030205 A2 Date of withdrawal of application: 20021211
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	200119	424
SPEC A	(English)	200119	5668
Total word count - document A			6092
Total word count - document B			0
Total word count - documents A + B			6092

...CLAIMS with non-conducting magnetic domain control films on both end portions thereof.
6. The tunneling **magnetoresistive head** as claimed in Claim 5, wherein said magnetic **domain control film** is made from an oxide-system antiferromagnetic material.
7. A tunneling magnetoresistive head production method...

...resist pattern excluding the both end portions on said second magnetic

layer.

8. The tunneling **magnetoresistive head** production method as claimed in Claim 7 wherein said magnetic **domain control film** is formed using an oxide-system antiferromagnetic material.

17/5,K/2 (Item 2 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00924744
Magnetoresistive film
Magnetoresistiver Film
Film magneto-resistant
PATENT ASSIGNEE:
SANYO ELECTRIC Co., Ltd., (238922), 5-5, Keihanhondori 2-chome, Moriguchi-shi, Osaka 570, (JP), (Applicant designated States: all)
INVENTOR:
Fujita, Masayuki, 350-301, Higashitsuchimikado-cho, Shinsawaragicho, Marutamachi-saga-ru Kamigyo-ku Kyoto 602, (JP)
Maeda, Atsushi, 6-17-25-203, Higashinakahama, Jyoto-ku, Osaka 536, (JP)
Oikawa, Satoru, 3-114, Ota, Yao-city, Osaka 581, (JP)
Yamano, Koji, 3-41-18, Nagao-Nishimachi, Hirakata-city, Osaka 573-01, (JP)
Kume, Minoru, 7-2, Tawaradai, Shijyounawate-city, Osaka 575, (JP)
LEGAL REPRESENTATIVE:
TER MEER STEINMEISTER & PARTNER GbR (100061), Mauerkircherstrasse 45, 81679 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 843368 A2 980520 (Basic)
EP 843368 A3 000126
APPLICATION (CC, No, Date): EP 97120206 971118;
PRIORITY (CC, No, Date): JP 96306736 961118; JP 97171781 970627
DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS: H01L-043/10

ABSTRACT EP 843368 A2
A magnetoresistive film is disclosed which has a layered structure comprising a first ferromagnetic layer, a second ferromagnetic layer, a nonmagnetic conductive layer interposed between the first and second ferromagnetic layers, and an antiferromagnetic layer coupled with one of the first and second ferromagnetic layers. The antiferromagnetic layer comprises an antiferromagnetic material selected from an antimony-base alloy, fluoride, an FeRh-base alloy, FeS, an IrMnCo-base alloy and a CrAl-base alloy.
ABSTRACT WORD COUNT: 70
NOTE:
Figure number on first page: 1

LEGAL STATUS (Type, Pub Date, Kind, Text):
Withdrawal: 010418 A2 Date application deemed withdrawn: 20000727
Search Report: 20000126 A3 Separate publication of the search report
Application: 980520 A2 Published application (A1with Search Report ;A2without Search Report)
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9821	963
SPEC A	(English)	9821	7209
Total word count - document A			8172
Total word count - document B			0
Total word count - documents A + B			8172

...CLAIMS of Cr and said antiferromagnetic layer is formed of an FeRh-base

alloy.

28. A **magnetoresistive element** comprising:
a **magnetoresistive film** ; and
a **domain control film** having a **layered** structure for controlling a magnetic domain of said magnetoresistive film,
said layered structure including:
an...

...said antiferromagnetic layer and comprising a material having a body-centered cubic structure.

29. The **magnetoresistive element** of claim 28, wherein said magnetoresistive film is the magnetoresistive film of any one of claims 22-27, and wherein the underlayer of the magnetoresistive **film** and the **underlayer** of said **domain control film** are formed of the same material, and wherein the antiferromagnetic layer of the magnetoresistive film and the antiferromagnetic **layer** of said **domain control film** are formed of the same material.

17/5,K/3 (Item 3 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00910746
Ferromagnetic tunnel junction, magnetoresistive element and magnetic head
Ferromagnetischer Tunnelubergang, magnetoresistives Element und Magnetkopf
Jonction tunnel ferromagnetique, element magnetoresistant et tete magnetique
PATENT ASSIGNEE:
TDK Corporation, (224160), 13-1, Nihonbashi 1-chome, Chuo-ku, Tokyo-to 103, (JP), (applicant designated states: AT;BE;CH;DE;DK;ES;FI;FR;GB;GR;IE;IT;LI;LU;MC;NL;PT;SE)
INVENTOR:
Noguchi, Kiyoshi, 845-12, Nenei, Saku-shi, Nagano 385, (JP)
Araki, Satoru, 201-89, Wakamatsucho, Wakaba-ku, Chiba-shi, Chiba 264, (JP)
Oike, Taro, 101 Ekimae Haitsu, 1106, Oaza Iwamurada, Saku-Shi, Nagano 385, (JP)
Ohta, Manabu, 2084-203, Nakagomi Mizukamicho, Saku-shi, Nagano 384-01, (JP)
Sano, Masashi, 2084-204, Nakagomi Mizukamicho, Saku-shi, Nagano 384-01, (JP)
LEGAL REPRESENTATIVE:
Dealtry, Brian et al (42911), Eric Potter & Clarkson St. Mary's Court St. Mary's Gate, Nottingham NG1 1LE, (GB)
PATENT (CC, No, Kind, Date): EP 831541 A2 980325 (Basic)
EP 831541 A3 990506
APPLICATION (CC, No, Date): EP 97307274 970918;
PRIORITY (CC, No, Date): JP 96248410 960919; JP 96330064 961210; JP 9753065 970307
DESIGNATED STATES: DE; FR
INTERNATIONAL PATENT CLASS: H01L-043/08; G11B-005/39;

ABSTRACT EP 831541 A2
This invention is directed to a ferromagnetic tunnel junction, an MR element and a magnetic head. A ferromagnetic tunnel junction is constituted by sequentially laminating a first ferromagnetic film (211), an insulating film (210) and a second ferromagnetic film (212). These are laminated on an appropriate insulating substrate (4). The present invention is characterized in that the barrier potential of the insulating film (210) is set within a range of 0.5 to 3eV. A ferromagnetic tunnel junction with which a high MR ratio can be achieved with good reproduction characteristics is provided.
ABSTRACT WORD COUNT: 93

LEGAL STATUS (Type, Pub Date, Kind, Text):
Examination: 20000105 A2 Date of request for examination: 19991105
Application: 980325 A2 Published application (A1with Search Report ;A2without Search Report)
Search Report: 990506 A3 Separate publication of the European or International search report
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9813	1559
SPEC A	(English)	9813	15894
Total word count - document A			17453
Total word count - document B			0
Total word count - documents A + B			17453

...CLAIMS the area of tunnel junction is at or less than 10 (mu)m2).

15. A **magnetoresistive element** according to Claim 8, futher comprising :

a magnetic **domain control film** provided adjacent to both end portions of either said first ferromagnetic film or said second ferromagnetic film.

16. A **magnetoresistive element** according to Claim 15, wherein :

said magnetic **domain control film** is constituted of a hard ferromagnetic film.

17. A magnetoresistive element according to Claim 16...

...of at least one alloy selected from CoPt, CoPtCr, CoPtTa, CoCrTa and CoPtTaCr.

19. A **magnetoresistive element** according to Claim 15, wherein :

said magnetic **domain control film** is constituted of an antiferromagnetic film.

20. A magnetoresistive element according to Claim 19, wherein...

...axis of another ferromagnetic film extending parallel to said applied external magnetic field.

29. A **magnetoresistive element** according to Claim 8, wherein :

of said first ferromagnetic film and said second ferromagnetic film, the ferromagnetic **film** not provided with said magnetic **domain control film** is a hard ferromagnetic **film** with a coercivity higher than the coercivity of said ferromagnetic **film** provided with said magnetic **domain control film** .

30. A **magnetoresistive element** according to Claim 15, wherein :

said magnetic easy axis of said ferromagnetic **film** provided with said magnetic **domain control film** extends perpendicular to the direction of said applied external magnetic field.

31. A **magnetoresistive element** according to Claim 15, wherein :

of said first ferromagnetic film and said second ferromagnetic film, said ferromagnetic **film** not provided with said magnetic **domain control film** is provided with a magnetization pinning film.

32. A magnetoresistive element according to Claim 31...

...Claim 31, wherein :

said magnetization pinning film is constituted of an antiferromagnetic film.

34. A **magnetoresistive element** according to Claim 31, wherein :

of said first ferromagnetic film and said second ferromagnetic

film, said magnetic easy axis of said ferromagnetic **film** provided with said magnetic **domain control film** extends perpendicular to a direction of said applied external magnetic field, whereas said magnetic easy...

17/5,K/4 (Item 4 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00891352
Magnetic head having encapsulated magnetoresistive transducer and multilayered lead structure
Magnetkopf mit verkapseltem magnetoresistivem Wandler und Multischichtleiterstruktur
Tete magnetique comportant un transducteur magnetoresistif encapsule et une structure de conducteur multicouche
PATENT ASSIGNEE:
READ-RITE CORPORATION, (824840), 345 Los Coches Street, Milpitas California 95035, (US), (applicant designated states: DE;NL)
INVENTOR:
Shen, Yong, 1084 Hay Court, Milpitas, California 95035, (US)
Torng, Chvu Jiuh, 6234 Camino Delago, Pleasanton, California 94566, (US)
Nepela, Danial A., 1009 Blossom River Way No. 247, San Jose, California 95123, (US)
LEGAL REPRESENTATIVE:
Korber, Wolfhart, Dr. rer.nat. et al (44475), Patentanwalte Mitscherlich & Partner, Sonnenstrasse 33, 80331 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 814460 A2 971229 (Basic)
EP 814460 A3 980916
APPLICATION (CC, No, Date): EP 97109963 970618;
PRIORITY (CC, No, Date): US 666209 960620
DESIGNATED STATES: DE; NL
INTERNATIONAL PATENT CLASS: G11B-005/39

ABSTRACT EP 814460 A2
A magnetic head assembly (10) includes a read head (14) having an active central region (18) and two inactive side regions (20, 22) contiguously formed relative to the central region (18). The central region (18) includes a magnetoresistive (MR) transducer for enabling active sensing of data recorded on a magnetic medium. Protective layers encapsulate the central region (18) and separate it from the side regions (20, 22), such that diffusion and electromigration are reduced. Each end region includes a **longitudinal bias layer** , and a **multilayered** conductive section. The **longitudinal bias layer** may be formed of alternating layers of antiferromagnetic material and layers of soft magnetic material and/or hard magnetic **longitudinal bias** . The **multilayered** conductive section includes conductive leads (62, 63) that do not contact either the **MR element** or the soft bias layer (34). The conductive layers (62, 63) are interlayered between a plurality of spacers that provide structural support to the conductive section (60), and that increase the overall mechanical hardness of the conductive section (60). Some or all of the protective layers (26, 27, 30, 32) as well as the spacers of the conductive sections may be made from selected refractory materials.
ABSTRACT WORD COUNT: 195

LEGAL STATUS (Type, Pub Date, Kind, Text):

Withdrawal:	000614 A2	Date of withdrawal of application: 20000418
Application:	971229 A2	Published application (A1with Search Report ;A2without Search Report)
Search Report:	980916 A3	Separate publication of the European or International search report
Examination:	990324 A2	Date of filing of request for examination: 990121

Change: 990526 A2 Designated Contracting States (change)
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9712W3	891
SPEC A	(English)	9712W3	2614
Total word count - document A			3505
Total word count - document B			0
Total word count - documents A + B			3505

...ABSTRACT regions (20, 22), such that diffusion and electromigration are reduced. Each end region includes a **longitudinal bias layer** , and a **multilayered** conductive section. The **longitudinal bias layer** may be formed of alternating layers of antiferromagnetic material and layers of soft magnetic material and/or hard magnetic **longitudinal bias** . The **multilayered** conductive section includes conductive leads (62, 63) that do not contact either the **MR element** or the soft bias layer (34). The conductive layers (62, 63) are interlayered between a...

17/5,K/5 (Item 5 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00598676
Magnetoresistive sensor having antiferromagnetic layer for exchange bias
Magnetoresistiver Sensor mit antiferromagnetischer Schicht zur Austausch-Vormagnetisierung
Capteur magnetoresistive avec couche antiferromagnetique pour polarisation d'echange
PATENT ASSIGNEE:
International Business Machines Corporation, (200120), Old Orchard Road, Armonk, N.Y. 10504, (US), (applicant designated states: DE;FR;GB)
INVENTOR:
Lin, Tsann, 4017 Sadie Court, Campbell, Ca 95008, (US)
Howard, James Kent, 2705 Casa Grande, Morgan Hill, CA 95037, (US)
Hwang, Cherngye, 6713 San Anselmo Way, San Jose, CA 95119, (US)
Mauri, Daniele, 4990 Eberly Drive, San Jose, CA 95111, (US)
Staud, Norbert, 468 Broderick Drive, San Jose, Ca 95111, (US)
LEGAL REPRESENTATIVE:
Burt, Roger James, Dr. (52152), IBM United Kingdom Limited Intellectual Property Department Hursley Park, Winchester Hampshire SO21 2JN, (GB)
PATENT (CC, No, Kind, Date): EP 581418 A1 940202 (Basic)
EP 581418 B1 980107
APPLICATION (CC, No, Date): EP 93303991 930521;
PRIORITY (CC, No, Date): US 920943 920728
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: G11B-005/39; G01R-033/06;
CITED PATENTS (EP A): EP 334480 A; US 4755897 A; US 5014147 A

ABSTRACT EP 581418 A1
A magnetoresistive (MR) sensor (20) comprising a sputtered layer of ferromagnetic material (35) and a sputtered layer (39) of antiferromagnetic nickel-manganese (Ni-Mn) to provide an exchange coupled longitudinal bias field in the MR element is described. The antiferromagnetic layer (39) overlays the MR layer (35) and may be patterned to provide the longitudinal bias field only in the end regions of the MR layer. Alternatively, the antiferromagnetic layer can underlay the MR layer with a Zr underlayer to enhance the exchange-coupled field. As initially deposited, the Ni-Mn layer is face-centered-cubic and exhibits little or no exchange-coupled field. After one annealing cycle at a relatively low temperature, the Ni-Mn layer is face-centered-tetragonal and exhibits increased crystallographic ordering and provides sufficient exchange coupling for the MR element to operate. Addition of chromium to the Ni-Mn alloy provides increased corrosion resistance. (see image in original document)

ABSTRACT WORD COUNT: 145

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application:	940202 A1	Published application (A1with Search Report ;A2without Search Report)
Examination:	940720 A1	Date of filing of request for examination: 940519
Examination:	961204 A1	Date of despatch of first examination report: 961023
Grant:	980107 B1	Granted patent
Lapse:	981007 B1	Date of lapse of the European patent in a Contracting State: DE 980408
Oppn None:	981230 B1	No opposition filed
Lapse:	990623 B1	Date of lapse of the European patent in a Contracting State: DE 980408, GB 980521

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9802	865
CLAIMS B	(German)	9802	872
CLAIMS B	(French)	9802	1055
SPEC B	(English)	9802	4930
Total word count - document A			0
Total word count - document B			7722
Total word count - documents A + B			7722

CLAIMS 1. A **magnetoresistive** read **sensor** of the type having a layer of antiferromagnetic material (39) in direct contact with a layer of magnetoresistive ferromagnetic material (35) for inducing a **longitudinal bias** field in the ferromagnetic **layer** , wherein said antiferromagnetic layer comprises an alloy of manganese (Mn),

and characterised in that at...

...sensor to selected tracks on said magnetic storage medium.

24. A method for fabricating a **magnetoresistive sensor** as in any of Claims 1 to 22, having a layer of antiferromagnetic material in direct contact with a layer of magnetoresistive ferromagnetic material for inducing a **longitudinal bias** in the ferromagnetic **layer** , said method comprising the steps of:

depositing a layer of magnetoresistive ferromagnetic material on a...

17/5,K/6 (Item 6 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

00567376

A magnetoresistive element

Magnetoresistives Element

Element magnetoresistif

PATENT ASSIGNEE:

NEC CORPORATION, (236690), 7-1, Shiba 5-chome Minato-ku, Tokyo, (JP), (applicant designated states: DE;FR;GB;NL)

INVENTOR:

Motomura, Yoshihiro, c/o Nec Corporation, 7-1, Shiba 5-chome, Minato-ku, Tokyo, (JP)

Suzuki, Tetsuhiro, c/o Nec Corporation, 7-1, Shiba 5-chome, Minato-ku, Tokyo, (JP)

LEGAL REPRESENTATIVE:

VOSSIUS & PARTNER (100311), Postfach 86 07 67, 81634 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 570883 A2 931124 (Basic)
EP 570883 A3 940223
EP 570883 B1 980121

APPLICATION (CC, No, Date): EP 93108005 930517;

PRIORITY (CC, No, Date): JP 92124024 920518; JP 9326362 930216
DESIGNATED STATES: DE; FR; GB; NL
INTERNATIONAL PATENT CLASS: G11B-005/39;
CITED PATENTS (EP A): EP 432890 A; EP 288765 A; EP 265798 A

ABSTRACT EP 570883 A2
In a **magnetoresistive** effect **head** comprising a ferromagnetic **magnetoresistive** effect layer (4), an inverse ferromagnetic **layer** (3) for generating a **longitudinal bias** magnetic field by an exchange force with respect to the ferromagnetic magnetoresistive effect layer (4), a ground layer (2) having a face-centered cubic structure is provided on only a portion of the anti-ferromagnetic layer. The **magnetoresistive** effect **head** preferably further comprises a soft magnetic bias-assistant layer (6) for a transversal bias magnetic field in the ferromagnetic magnetoresistive effect layer. The soft magnetic bias-assistant layer (6) has a crystal structure other than a face-centered cubic structure and the ground layer having a face-centered cubic structure is provided on only a portion of the anti-ferromagnetic layer. (see image in original document)
ABSTRACT WORD COUNT: 123

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application:	931124	A2	Published application (A1with Search Report ;A2without Search Report)
Search Report:	940223	A3	Separate publication of the European or International search report
Examination:	940316	A2	Date of filing of request for examination: 940112
Change:	951227	A2	Representative (change)
Examination:	960925	A2	Date of despatch of first examination report: 960809
Grant:	980121	B1	Granted patent
Oppn None:	990113	B1	No opposition filed

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9804	462
CLAIMS B	(German)	9804	445
CLAIMS B	(French)	9804	514
SPEC B	(English)	9804	2711
Total word count - document A			0
Total word count - document B			4132
Total word count - documents A + B			4132

...ABSTRACT.A2
In a **magnetoresistive** effect **head** comprising a ferromagnetic **magnetoresistive** effect layer (4), an inverse ferromagnetic **layer** (3) for generating a **longitudinal bias** magnetic field by an exchange force with respect to the ferromagnetic magnetoresistive effect layer (4 ...

...centered cubic structure is provided on only a portion of the anti-ferromagnetic layer. The **magnetoresistive** effect **head** preferably further comprises a soft magnetic bias-assistant layer (6) for a transversal bias magnetic...

CLAIMS 1. A **magnetoresistive element** comprising a ferromagnetic **magnetoresistive** effect layer (4), an anti-ferromagnetic **layer** (3) for generating a **longitudinal bias** magnetic field with an exchange force with respect to said ferromagnetic magnetoresistive effect layer (4...

...characterized in that said ground layer (2) is provided only at end portions of the **magnetoresistive element** .
2. The **magnetoresistive element** according to claim 1, wherein said

ground layer (2) is Cu or alloys of NiCr...

...layer (3) is made of FeMn or a material mainly composed of FeMn.

5. A **magnetoresistive element** comprising a ferromagnetic **magnetoresistive** effect layer (15), an anti-ferromagnetic layer (14) magnetoresistive effect layer, an anti-ferromagnetic **layer** (14) for generating a **longitudinal bias** magnetic field by an exchange coupling force with respect to said ferromagnetic magnetoresistive effect layer...

...characterised in that said ground layer (13) is provided only at end portions of the **magnetoresistive element** , that said soft magnetic bias-assistant layer (12) has a crystal structure other than a...

17/5,K/7 (Item 7 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

00544235

Magnetoresistance effect type thin film magnetic head

Magnetowiderstandseffekt-Dunnfilmmagnetkopf

Tete magnetique a film mince a effet de magnetoresistance

PATENT ASSIGNEE:

SHARP KABUSHIKI KAISHA, (260716), 22-22 Nagaike-cho Abeno-ku, Osaka-shi Osaka-fu, (JP), (applicant designated states: DE;FR;GB;NL)

INVENTOR:

Komoda, Tomohisa, 170 Kirigaoka 2-chome, Aoyama-cho, Naga-gun, Mie-ken, (JP)

Minakata, Ryoji, 5-106 Takanoharaekimae-danchi, 15-1 Suzaku 3-chome, Nara-shi, Nara-ken, (JP)

Kira, Tohru, 2026-8 Yanagimoto-cho, Tenri-shi, Nara-ken, (JP)

Fujii, Akiyoshi, 3-24-23, Tatsuno-minami, Sango-cho, Ikoma-gun, Nara-ken, (JP)

Suzuki, Hiroshi, 362-22 Kitanagai-cho, Nara-shi, Nara-ken, (JP)

Mukai, Atsuo, 9-37-302 Tomiokita 2-chome, Nara-shi, Nara-ken, (JP)

LEGAL REPRESENTATIVE:

Brown, Kenneth Richard et al (28831), R.G.C. Jenkins & Co. 26 Caxton Street, London SW1H 0RJ, (GB)

PATENT (CC, No, Kind, Date): EP 534791 A2 930331 (Basic)
EP 534791 A3 930616
EP 534791 B1 970402

APPLICATION (CC, No, Date): EP 92308783 920925;

PRIORITY (CC, No, Date): JP 91249089 910927; JP 9252521 920311; JP 92238472 920907

DESIGNATED STATES: DE; FR; GB; NL

INTERNATIONAL PATENT CLASS: G11B-005/39;

CITED PATENTS (EP A): GB 2146482 A; US 4814919 A; EP 467457 A; EP 467457 A

CITED REFERENCES (EP A):

IBM TECHNICAL DISCLOSURE BULLETIN. vol. 20, no. 2, July 1977, ARMONK, NY, US pages 791 - 793 L. T. ROMANKIW

PATENT ABSTRACTS OF JAPAN vol. 11, no. 362 (P-640)(2809) 26 November 1987

PATENT ABSTRACTS OF JAPAN vol. 12, no. 329 (P-754)(3176) 7 September 1988

PATENT ABSTRACTS OF JAPAN vol. 9, no. 137 (P-363)(1860) 12 June 1985

PATENT ABSTRACTS OF JAPAN vol. 7, no. 202 (P-221)(1347) 7 September 1983;

ABSTRACT EP 534791 A2

The **head** includes a **MR element** (1) having the electrical resistance changed according to a change in an applied signal magnetic field, a lead electrode (2) for detecting a voltage change generated across the ends of the **MR element** in which a change in electrical resistance is generated, and high coercive force films (11a, 11b) for applying a weak magnetic field to the **MR element** (1). The high coercive force films (11a, 11b) are arranged in the proximity of the ends of the **MR element** (1) and at a predetermined position between the

ends. According to this structure, a weak magnetic field is applied in uniform over the entire **MR element** to facilitate unification of magnetic domain of the **MR element** even in the case of a long **MR element** (1). Therefore, unification of magnetic domain can easily be carried out over the entire region of the **MR element** without increasing the film thickness of the high coercive force film even in the case of a wide track width, resulting in a thin **film** magnetic head with no **Barkhausen noise** generation. (see image in original document)
ABSTRACT WORD COUNT: 188

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application:	930331 A2	Published application (A1with Search Report ;A2without Search Report)
Search Report:	930616 A3	Separate publication of the European or International search report
Examination:	940126 A2	Date of filing of request for examination: 931201
Examination:	960306 A2	Date of despatch of first examination report: 960117
Grant:	970402 B1	Granted patent
Oppn None:	980325 B1	No opposition filed

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPAB97	701
CLAIMS B	(German)	EPAB97	666
CLAIMS B	(French)	EPAB97	777
SPEC B	(English)	EPAB97	6189
Total word count - document A			0
Total word count - document B			8333
Total word count - documents A + B			8333

...ABSTRACT A2
The **head** includes a **MR element** (1) having the electrical resistance changed according to a change in an applied signal magnetic...

...a lead electrode (2) for detecting a voltage change generated across the ends of the **MR element** in which a change in electrical resistance is generated, and high coercive force films (11a, 11b) for applying a weak magnetic field to the **MR element** (1). The high coercive force films (11a, 11b) are arranged in the proximity of the ends of the **MR element** (1) and at a predetermined position between the ends. According to this structure, a weak magnetic field is applied in uniform over the entire **MR element** to facilitate unification of magnetic domain of the **MR element** even in the case of a long **MR element** (1). Therefore, unification of magnetic domain can easily be carried out over the entire region of the **MR element** without increasing the film thickness of the high coercive force film even in the case of a wide track width, resulting in a thin **film** magnetic head with no **Barkhausen noise** generation. (see image in original document)

17/5,K/8 (Item 8 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00490599
Magnetoresistive sensor
Magnetoresistiver Fuhler
Capteur magnetoresistif
PATENT ASSIGNEE:
International Business Machines Corporation, (200120), Old Orchard Road, Armonk, N.Y. 10504, (US), (Proprietor designated states: all)
INVENTOR:
Dieny, Bernard, 5435 Entrada Cedros, San Jose, California 95125, (US)

Gurney, Bruce Alvin, 3770 Flora Vista Avenue, No.1308, Santa Clara, California 95051, (US)
Lambert, Steven Eugene, 6506 Hidden Creek Drive, San Jose, California 95120, (US)
Mauri, Daniele, 4490 Eberly Drive, San Jose, California 95111, (US)
Parkin, Stuart Stephen Papworth, 6264 Royal Oak Court, San Jose, California 95123, (US)
Speriosu, Virgil Simon, 351 St. Julian Drive, San Jose, California 95119, (US)
Wilhoit, Dennis Richard, 575 Spring Hill Drive, Morgan Hill, California 95037, (US)
LEGAL REPRESENTATIVE:
Burt, Roger James, Dr. (52152), IBM United Kingdom Limited Intellectual Property Department Hursley Park, Winchester Hampshire SO21 2JN, (GB)

PATENT (CC, No, Kind, Date): EP 490608 A2 920617 (Basic)
EP 490608 A3 930526
EP 490608 B1 000308
APPLICATION (CC, No, Date): EP 91311417 911209;
PRIORITY (CC, No, Date): US 625343 901211
DESIGNATED STATES: BE; CH; DE; FR; GB; IT; LI; NL; SE
INTERNATIONAL PATENT CLASS: G01R-033/06; H01F-010/08
CITED PATENTS (EP A): EP 216062 A; US 4385273 A; EP 442407 A; US 4785366 A; US 4755897 A
CITED PATENTS (EP B): EP 216062 A; EP 346817 A; EP 442407 A; US 4385273 A; US 4755897 A; US 4785366 A
CITED REFERENCES (EP A):
PHYSICAL REVIEW, B. CONDENSED MATTER vol. 43, no. 1, 1 January 1991, NEW YORK US pages 1297 - 1300 B. DIENY ET AL. 'Giant Magnetoresistance in soft ferromagnetic multilayers';
CITED REFERENCES (EP B):
PHYSICAL REVIEW, B. CONDENSED MATTER vol. 43, no. 1, 1 January 1991, NEW YORK US pages 1297 - 1300 B. DIENY ET AL. 'Giant Magnetoresistance in soft ferromagnetic multilayers'
J. Appl. Phys. 67 (9), 1 May 1990, pages 5680-5682;

ABSTRACT EP 490608 A2

A magnetoresistive (MR) sensor is disclosed which comprises a first and a second thin film layer of a magnetic material separated by a thin film layer of a non-magnetic metallic material. The first ferromagnetic layer is magnetically soft. The magnetization direction of the first layer of magnetic material is set substantially perpendicular to the magnetization of the second layer of magnetic material at zero applied field, and the magnetization direction of the second layer of magnetic material is fixed. A current flow is produced through the MR sensor, and the variations in voltage across the MR sensor are sensed due to changes in resistance of the MR sensor produced by rotation of the magnetization in the first layer of magnetic material as a function of the magnetic field being sensed. The variation of the resistance with the angle between the magnetizations of the first and second layers of magnetic material has been defined as the spin valve (SV) effect. It is also shown that, by a suitable direction of the current with respect to the fixed magnetization, the (SV) magnetoresistance can be added constructively to the usual anisotropic magnetoresistance. (see image in original document)

ABSTRACT WORD COUNT: 196
NOTE:
Figure number on first page: 5

LEGAL STATUS (Type, Pub Date, Kind, Text):
Oppn None: 010221 B1 No opposition filed: 20001209
Grant: 20000308 B1 Granted patent
Lapse: 020807 B1 Date of lapse of European Patent in a contracting state (Country, date): FR 20000308,
Application: 920617 A2 Published application (A1with Search Report

;A2without Search Report)
Examination: 921223 A2 Date of filing of request for examination: 921022
Search Report: 930526 A3 Separate publication of the European or International search report
Examination: 950315 A2 Date of despatch of first examination report: 950126
Change: 990512 A2 Title of invention (French) (change)
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200010	560
CLAIMS B	(German)	200010	523
CLAIMS B	(French)	200010	611
SPEC B	(English)	200010	3099
Total word count - document A			0
Total word count - document B			4793
Total word count - documents A + B			4793

...CLAIMS difference in rotation of the magnetization directions of said layers of ferromagnetic material.

9. A **magnetoresistive sensor** as claimed in any preceding claim, further comprising means for producing **longitudinal bias** sufficient to maintain said first **layer** of ferromagnetic material in a single domain state.
10. A **magnetoresistive sensor** as claimed in claim 9, wherein said means for producing a **longitudinal bias** comprises a biassing **layer** of antiferromagnetic material in direct contact with the end regions only of said first layer of ferromagnetic material.
11. A **magnetoresistive sensor** as claimed in claim 9, wherein said means for producing a **longitudinal bias** comprises a biassing **layer** of hard ferromagnetic material (26) in direct contact with the end regions only of said...

17/5,K/9 (Item 9 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00442611
Very low noise magnetoresistive sensor for high density media applications.
Magnetoresistiver Sensor mit sehr niedrigem Rauschen fur die Anwendung bei Medien mit hoher Schreibdichte.
Palpeur silencieux a resistance magnetique pour utilisations dans des milieux a haute densite.
PATENT ASSIGNEE:
International Business Machines Corporation, (200120), Old Orchard Road, Armonk, N.Y. 10504, (US), (applicant designated states: DE;FR;GB)
INVENTOR:
Aboaf, Joseph Adam, 3930 N. Four Winds Drive, Tucson, AZ 85715, (US)
Kahwaty, Vincent Noel, 7856 E. Highview Place, Tucson, AZ 85715, (US)
Nix, James Lamar, 11881 E. Ponce de Leon Road, Tucson, AZ 85749, (US)
Shelledy, Frank Boyd, 4538 S. Meadow Drive, Boulder, CO 80301, (US)
LEGAL REPRESENTATIVE:
Burt, Roger James, Dr. et al (52152), IBM United Kingdom Limited Intellectual Property Department Hursley Park, Winchester Hampshire SO21 2JN, (GB)
PATENT (CC, No, Kind, Date): EP 412071 A2 910206 (Basic)
EP 412071 A3 910313
EP 412071 B1 940914
APPLICATION (CC, No, Date): EP 90850197 900521;
PRIORITY (CC, No, Date): US 388241 890801
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: G11B-005/39; G11B-005/37;
CITED PATENTS (EP A): US 4713708 A; US 4914538 A; US 4814919 A; US 4639806

A

ABSTRACT EP 412071 A2
A soft film biased **magnetoresistive sensor** (10) is fabricated to have reduced **Barkhausen noise** . The magnetic ratio of the **film** layers (14 and 18) is controlled to be in the range of 1.7 to 1.95 and the optimum bias point is controlled to be in the range of 35 and 41 degrees.
ABSTRACT WORD COUNT: 56

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application:	910206	A2 Published application (A1with Search Report ;A2without Search Report)
Examination:	910206	A2 Date of filing of request for examination: 901213
Search Report:	910313	A3 Separate publication of the European or International search report
Change:	930324	A2 Representative (change)
Examination:	940112	A2 Date of despatch of first examination report: 931126
Grant:	940914	B1 Granted patent
Oppn None:	950906	B1 No opposition filed

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPBBF1	287
CLAIMS B	(English)	EPBBF1	268
CLAIMS B	(German)	EPBBF1	270
CLAIMS B	(French)	EPBBF1	295
SPEC A	(English)	EPBBF1	3008
SPEC B	(English)	EPBBF1	2973
Total word count - document A			3295
Total word count - document B			3806
Total word count - documents A + B			7101

...ABSTRACT A2
A soft film biased **magnetoresistive sensor** (10) is fabricated to have reduced **Barkhausen noise** . The magnetic ratio of the **film** layers (14 and 18) is controlled to be in the range of 1.7 to...

...CLAIMS A3
1. In a soft **film** biased **magnetoresistive sensor** with reduced **Barkhausen noise** , comprising a magnetoresistive **film** having a first saturated magnetic flux density for said magnetoresistive film and a first film...

...CLAIMS B1
1. A soft **film** biased **magnetoresistive sensor** with reduced **Barkhausen noise** , comprising a magnetoresistive **film** (14) having a first saturated magnetic flux density BMRS for said magnetoresistive film and a...

17/5,K/10 (Item 10 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00435897
Magnetoresistive sensor.
Magnetoresistiver Fuhler.
Capteur magnetoresistif.
PATENT ASSIGNEE:
International Business Machines Corporation, (200120), Old Orchard Road, Armonk, N.Y. 10504, (US), (applicant designated states: DE;FR;GB)
INVENTOR:

Parkin, Stuart, Stephen,Papworth, 6264 Royal Oak Court, San Jose, CA 95123, (US)
Roche, Kevin Patrick, 431 East St John, Apt.4, San Jose, CA 95112, (US)
Speriosu, Virgil Simon, 351 St Julie Drive, San Jose, CA 95119, (US)
LEGAL REPRESENTATIVE:
Burt, Roger James, Dr. (52152), IBM United Kingdom Limited Intellectual Property Department Hursley Park, Winchester Hampshire SO21 2JN, (GB)
PATENT (CC, No, Kind, Date): EP 432890 A2 910619 (Basic)
EP 432890 A3 920603
EP 432890 B1 950517
APPLICATION (CC, No, Date): EP 90311901 901030;
PRIORITY (CC, No, Date): US 429678 891031
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: G01R-033/09;
CITED PATENTS (EP A): US 4103315 A; EP 314343 A
CITED REFERENCES (EP A):
JOURNAL OF APPLIED PHYSICS. vol. 52, no. 3, March 1981, NEW YORK US pages 2471 - 2473; C.TSANG ET AL.: 'Exchange induced unidirectional anisotropy at FeMn-Ni80Fe20 Interfaces'
JOURNAL OF THE ELECTROCHEMICAL SOCIETY. vol. 136, no. 6, June 1989, MANCHESTER, NEW HAMPSHIRE US pages 1793 - 1798; M.A. RUSSAK ET AL.: 'MnFe and NiFe Films and Magnetic Exchange Bilayers';

ABSTRACT EP 432890 A2
An improved thin'film magnetoresistive (MR) sensor uses an alloy comprising Fe(sub((1-x)))Mn(sub(x)) where x is within the range of 0.3 to 0.4, as an antiferromagnetic layer to provide longitudinal exchange bias in the ferromagnetic MR layer. In a specific embodiment the exchange bias is at a high level and is independent of thickness of the antiferromagnetic layer over a wide range. (see image in original document)
ABSTRACT WORD COUNT: 71

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application:	910619	A2	Published application (A1with Search Report ;A2without Search Report)
Examination:	910619	A2	Date of filing of request for examination: 901213
Search Report:	920603	A3	Separate publication of the European or International search report
Change:	920812	A2	Representative (change)
Examination:	940316	A2	Date of despatch of first examination report: 940131
Grant:	950517	B1	Granted patent
Oppn None:	960508	B1	No opposition filed

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPAB95	255
CLAIMS B	(German)	EPAB95	255
CLAIMS B	(French)	EPAB95	270
SPEC B	(English)	EPAB95	2633
Total word count - document A			0
Total word count - document B			3413
Total word count - documents A + B			3413

...CLAIMS B1
1. A **magnetoresistive sensor** having an antiferromagnetic layer in direct contact with a magnetoresistive ferromagnetic **layer** for inducing a **longitudinal bias** in the ferromagnetic **layer** , characterised in that said antiferromagnetic layer comprises an alloy of manganese (Mn) and iron (Fe...

17/5,K/11 (Item 11 from file: 348)

00434692
Magnetoresistive transducer.
Magnetoresistiver Wandler.
Transducteur magnetoresistif.
PATENT ASSIGNEE:
International Business Machines Corporation, (200120), Old Orchard Road, Armonk, N.Y. 10504, (US), (applicant designated states: DE;FR;GB)
INVENTOR:
Krounbi, Mohamad Towfik, 6238 Paso Los Cerritos, San Jose, CA 95120, (US)
Voegeli, Otto, 13465 Sycamore Avenue, Morgan Hill, CA 95037, (US)
Wang, Po-Kang, 1007 Shadow Brook Drive, San Jose, CA 95120, (US)
LEGAL REPRESENTATIVE:
Bailey, Geoffrey Alan (27921), IBM United Kingdom Limited Intellectual Property Department Hursley Park, Winchester Hampshire SO21 2JN, (GB)
PATENT (CC, No, Kind, Date): EP 422806 A2 910417 (Basic)
EP 422806 A3 930303
EP 422806 B1 950802
APPLICATION (CC, No, Date): EP 90310687 900928;
PRIORITY (CC, No, Date): US 419246 891010
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: G11B-005/39;
CITED PATENTS (EP A): EP 279536 A; EP 335488 A; EP 265798 A
CITED REFERENCES (EP A):
PATENT ABSTRACTS OF JAPAN vol. 13, no. 162 (P-859)19 April 1989;

ABSTRACT EP 422806 A2
A magnetoresistive (MR) read transducer having passive end regions (50) separated by a central active region (44) in which an MR layer (42) is formed which extends over substantially only the central active region and in which a hard magnetic layer (46) is formed in each end region. The hard magnetic layers form an abutting junction (48) having electrical and magnetic continuity with the MR **layer** to produce a **longitudinal bias** in the **MR sensor** . The transducer is produced by a method in which the same stencil defines the extent of both the MR layer and the hard magnetic layers so that the abutting junctions are formed easily and reliably. (see image in original document)
ABSTRACT WORD COUNT: 119

LEGAL STATUS (Type, Pub Date, Kind, Text):
Application: 910417 A2 Published application (A1with Search Report ;A2without Search Report)
Examination: 910417 A2 Date of filing of request for examination: 901213
Search Report: 930303 A3 Separate publication of the European or International search report
Examination: 940608 A2 Date of despatch of first examination report: 940425
Grant: 950802 B1 Granted patent
Oppn None: 960724 B1 No opposition filed
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPAB95	730
CLAIMS B	(German)	EPAB95	743
CLAIMS B	(French)	EPAB95	764
SPEC B	(English)	EPAB95	1992
Total word count - document A			0
Total word count - document B			4229
Total word count - documents A + B			4229

...ABSTRACT magnetic layers form an abutting junction (48) having electrical and magnetic continuity with the MR **layer** to produce a

longitudinal bias in the **MR sensor** . The transducer is produced by a method in which the same stencil defines the extent...

17/5,K/12 (Item 12 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00288694
Magnetoresistive sensor with improved antiferromagnetic film.
Magnetoresistiver Sensor mit antiferromagnetischem Film.
Capteur magnetoresistif a film antiferromagnetique.
PATENT ASSIGNEE:
International Business Machines Corporation, (200120), Old Orchard Road, Armonk, N.Y. 10504, (US), (applicant designated states: DE;FR;GB)
INVENTOR:
Howard, James Kent, 2705 Casa Grande Court, Morgan Hill, CA 95037, (US)
LEGAL REPRESENTATIVE:
Burt, Roger James, Dr. (52152), IBM United Kingdom Limited Intellectual Property Department Hursley Park, Winchester Hampshire SO21 2JN, (GB)
PATENT (CC, No, Kind, Date): EP 288766 A2 881102 (Basic)
EP 288766 A3 901205
EP 288766 B1 930908
APPLICATION (CC, No, Date): EP 88105079 880329;
PRIORITY (CC, No, Date): US 43675 870428
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: G11B-005/39;
CITED PATENTS (EP A): US 4103315 A; US 4089711 A; EP 216062 A; US 3887944 A ; US 3840898 A
CITED REFERENCES (EP A):
JOURNAL OF APPLIED PHYSICS. vol. 52, no. 3, March 1981, NEW YORK US pages 2471 - 2473; C.Tsang et al: "Exchange induced unidirectional anisotropy at FeMn-Ni80Fe20 interfaces";

ABSTRACT EP 288766 A2
An improved thin film magnetoresistive (MR) sensor uses an alloy comprising Fe, Mn and Cr as an antiferromagnetic layer to provide a longitudinal exchange bias in the ferromagnetic MR layer. Sufficient exchange biasing is provided and the FeMnCr layer exhibits excellent corrosion resistance.
ABSTRACT WORD COUNT: 47

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application:	881102 A2	Published application (A1with Search Report ;A2without Search Report)
Examination:	890419 A2	Date of filing of request for examination: 890222
Search Report:	901205 A3	Separate publication of the European or International search report
Examination:	920129 A2	Date of despatch of first examination report: 911218
Grant:	930908 B1	Granted patent
Oppn None:	940831 B1	No opposition filed
Lapse:	970423 B1	Date of lapse of the European patent in a Contracting State: DE 961203
Lapse:	970423 B1	Date of lapse of the European patent in a Contracting State: DE 961203, GB 960329

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	114
CLAIMS B	(German)	EPBBF1	115
CLAIMS B	(French)	EPBBF1	124
SPEC B	(English)	EPBBF1	1575

Total word count - document A 0

Total word count - document B 1928
Total word count - documents A + B 1928

...CLAIMS B1
1. A **magnetoresistive sensor** of the type having a layer of antiferromagnetic material (18) in direct contact with **a** magnetoresistive **layer** of **ferromagnetic material** (16) for inducing **a** longitudinal exchange bias field (H(sub(ua))) in the magnetoresistive layer (16), the antiferromagnetic layer...

17/5,K/13 (Item 13 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00288691
Magnetoresistive sensor with mixed phase antiferromagnetic film.
Magnetoresistiver Sensor mit antiferromagnetischem Film von gemischter Phase.
Capteur magnetoresistif a film antiferromagnetique de phase mixte.
PATENT ASSIGNEE:
International Business Machines Corporation, (200120), Old Orchard Road, Armonk, N.Y. 10504, (US), (applicant designated states: DE;FR;GB)
INVENTOR:
Howard, James Kent, 2705 Casa Grande Court, Morgan Hill, CA 95037, (US)
Huang, Ting Chun, 6584 Radko Drive, San Jose, CA 95119, (US)
LEGAL REPRESENTATIVE:
Burt, Roger James, Dr. (52152), IBM United Kingdom Limited Intellectual Property Department Hursley Park, Winchester Hampshire SO21 2JN, (GB)
PATENT (CC, No, Kind, Date): EP 288765 A2 881102 (Basic)
EP 288765 A3 901107
EP 288765 B1 930804
APPLICATION (CC, No, Date): EP 88105076 880329;
PRIORITY (CC, No, Date): US 43674 870428
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: G11B-005/39;
CITED PATENTS (EP A): EP 216062 A; US 4103315 A; US 3887944 A; US 3840898 A
CITED REFERENCES (EP A):
JOURNAL OF APPLIED PHYSICS. vol. 52, no. 3, March 1981, NEW YORK US pages 2471 - 2473; C.Tsang et al: "Exchange induced unidirectional anisotropy at FeMn-Ni80Fe20 interfaces";

ABSTRACT EP 288765 A2
An improved thin film magnetoresistive (MR) sensor uses an iron-manganese (FeMn) alloy, with the alpha (body-centered-cubic) phase of FeMn present in the alloy, as an antiferromagnetic layer. The presence of alpha FeMn improves the longitudinal exchange bias in the ferromagnetic MR layer, especially when the amount of alpha FeMn exceeds the amount of gamma (face-centered-cubic) FeMn in the FeMn layer.
ABSTRACT WORD COUNT: 64

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application:	881102 A2	Published application (A1with Search Report ;A2without Search Report)
Examination:	890419 A2	Date of filing of request for examination: 890222
Search Report:	901107 A3	Separate publication of the European or International search report
Examination:	920129 A2	Date of despatch of first examination report: 911218
Grant:	930804 B1	Granted patent
Oppn None:	940727 B1	No opposition filed
Lapse:	970423 B1	Date of lapse of the European patent in a Contracting State: DE 961203
Lapse:	970423 B1	Date of lapse of the European patent in a

Contracting State: DE 961203, GB 960329
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	143
CLAIMS B	(German)	EPBBF1	135
CLAIMS B	(French)	EPBBF1	164
SPEC B	(English)	EPBBF1	1439
Total word count - document A			0
Total word count - document B			1881
Total word count - documents A + B			1881

...CLAIMS B1

1. A **magnetoresistive sensor** of the type having a layer of antiferromagnetic material (18) in direct contact with **a** magnetoresistive **layer** of **ferromagnetic material** (16) for inducing **a** longitudinal exchange bias field (H(sub(UA))) in the magnetoresistive layer (16), the antiferromagnetic material...

17/5,K/14 (Item 14 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00210413
Magnetic transducer head utilizing magnetoresistance effect.
Den Magnetwiderstandseffekt verwendender Magnetwandlerkopf.
Tete de transducteur magnetique utilisant l'effet de magnetoresistance.
PATENT ASSIGNEE:
SONY CORPORATION, (214021), 7-35 Kitashinagawa 6-chome Shinagawa-ku, Tokyo 141, (JP), (applicant designated states: DE;FR;GB;NL)
INVENTOR:
Takino, Hiroshi, SONY CORPORATION 7-35, Kitashinagawa 6-chome, Shinagawa-ku Tokyo, (JP)
Imakoshi, Shigeyoshi, SONY CORPORATION 7-35, Kitashinagawa 6-chome, Shinagawa-ku Tokyo, (JP)
Terada, Nobuhiro, SONY CORPORATION 7-35, Kitashinagawa 6-chome, Shinagawa-ku Tokyo, (JP)
Saito, Norio, SONY CORPORATION 7-35, Kitashinagawa 6-chome, Shinagawa-ku Tokyo, (JP)
Suyama, Hideo, SONY CORPORATION 7-35, Kitashinagawa 6-chome, Shinagawa-ku Tokyo, (JP)
Tsunewaki, Kenichiro, SONY CORPORATION 7-35, Kitashinagawa 6-chome, Shinagawa-ku Tokyo, (JP)
LEGAL REPRESENTATIVE:
TER MEER - MULLER - STEINMEISTER & PARTNER (100061), Mauerkircherstrasse 45, D-81679 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 221540 A2 870513 (Basic)
EP 221540 A3 910327
EP 221540 B1 940824
APPLICATION (CC, No, Date): EP 86115284 861104;
PRIORITY (CC, No, Date): JP 85247752 851105
DESIGNATED STATES: DE; FR; GB; NL
INTERNATIONAL PATENT CLASS: G11B-005/39;
CITED PATENTS (EP A): US 4356523 A; EP 154005 A; US 4438470 A; JP 61182620 A; EP 218814 A
CITED REFERENCES (EP A):
PATENT ABSTRACTS OF JAPAN, vol. 2, no. 17, 6th February 1978, page 10970 E77; & JP-A-52 134 420 (NIPPON DENKI K.K.) 10-11-1977
PATENT ABSTRACTS OF JAPAN, vol. 5, no. 92 (P-66) 764 , 16th June 1981; & JP-A-56 037 823 (MITSUBISHI DENKI K.K.) 11-04-1981
PATENT ABSTRACTS OF JAPAN, vol. 9, no. 24 (P-331) 1747 , 31st January 1985; & JP-A-59 168 916 (FUJITSU K.K.) 22-09-1984
PATENT ABSTRACTS OF JAPAN, vol. 1, no. 88 (E-77) 2116 , 16th August 1977; & JP-A-52 023 924 (MATSUSHITA DENKI SANGYO K.K.) 23-02-1977;

ABSTRACT EP 221540 A2

In the **MR** magnetic **head** of the present invention, its sensing element (2) comprises a plurality of superposed magnetic layers (4,5) having magnetoresistance effect in at least one of them and a nonmagnetic intermediate layer (3) sandwiched therebetween, and a sensing current(i) is fed to flow in the sensing element (2) in the same direction as a signal magnetic field applied to the element. Each of the magnetic layers (4,5) is so formed as to have an easy axis of magnetization substantially perpendicular to the signal magnetic field or to have an isotropic magnetic characteristic in the magnetic **film** plane, thereby avoiding generation of **Barkhausen noise** with certainty. (see image in original document) (see image in original document)

ABSTRACT WORD COUNT: 120

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application:	870513 A2	Published application (A1with Search Report ;A2without Search Report)
Examination:	910227 A2	Date of filing of request for examination: 901220
Search Report:	910327 A3	Separate publication of the European or International search report
Examination:	920401 A2	Date of despatch of first examination report: 920219
Grant:	940824 B1	Granted patent
Oppn None:	950816 B1	No opposition filed

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	351
CLAIMS B	(German)	EPBBF1	327
CLAIMS B	(French)	EPBBF1	404
SPEC B	(English)	EPBBF1	5432
Total word count - document A			0
Total word count - document B			6514
Total word count - documents A + B			6514

...ABSTRACT A2

In the **MR** magnetic **head** of the present invention, its sensing element (2) comprises a plurality of superposed magnetic layers...

...to the signal magnetic field or to have an isotropic magnetic characteristic in the magnetic **film** plane, thereby avoiding generation of **Barkhausen noise** with certainty. (see image in original document) (see image in original document)

17/5,K/15 (Item 1 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

00279111 **Image available**

MAGNETORESISTIVE ELEMENT HAVING COMPOSITE STRUCTURE AND THIN FILM MAGNETIC HEAD INCORPORATING SAME

ELEMENT MAGNETORESISTIF POSSEDANT UNE STRUCTURE COMPOSITE ET TETE MAGNETIQUE A COUCHES MINCES COMPRENANT CELUI-CI

Patent Applicant/Assignee:

PHILIPS ELECTRONICS N V,

PHILIPS NORDEN AB,

Inventor(s):

MITCHELL Terry,

TOLMAN Charles,

GEORGE Peter K,

MOWRY Gregory S,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9427288 A1 19941124
Application: WO 94IB98 19940509 (PCT/WO IB9400098)
Priority Application: US 9360329 19930511
Designated States: JP AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE
Main International Patent Class: G11B-005/39
Publication Language: English
Fulltext Availability:
Detailed Description
Claims
Fulltext Word Count: 3016

English Abstract
The invention relates to a **magnetoresistive** read **element** and a thin film magnetic head incorporating the same. The **magnetoresistive element** (200) comprises an elongated main body portion (220) which includes the central or active region of the element, elongated neck portions (240, 260) at each end of the main body portion, transition regions (280, 300) connecting the main body portion with the neck portions, and at least two arm portions (320, 340), each connected to a neck at an angle to the longitudinal axis (L) of the main body. In a **magnetoresistive** read **element** having this shape a single magnetic domain is maintained in the central region during reading, thereby avoiding **Barkhausen noise** . An integrated thin **film** magnetic head structure may comprise a plurality of thin film magnetic heads arranged on a single substrate, each **head** incorporating the **magnetoresistive element** .

French Abstract
L'invention se rapporte a un element de lecture magnetoresistif et a une tete magnetique a couches minces comportant celui-ci. L'element magnetoresistif (200) possede un corps principal allonge (220) comprenant la zone centrale ou active de l'element, une partie allongee (240, 260) en forme de col a chaque extremite du corps principal, des zones de transition (280, 300) reliant le corps principal aux parties en forme de col et au moins deux bras (320, 340), chacun relie aux parties en forme de col et formant un angle avec l'axe longitudinal (L) du corps principal. Dans un element de lecture magnetoresistif de cette forme, un domaine magnetique unique est maintenu dans la region centrale lors de la lecture, evitant ainsi le bruit du a l'effet Barkhausen. Une structure de tete magnetique a couches minces integree peut comprendre une pluralite de tetes mangnetiques a couches minces disposees sur un substrat unique, chaque tete comportant ledit element magnetoresistif.

English Abstract
The invention relates to a **magnetoresistive** read **element** and a thin film magnetic head incorporating the same. The **magnetoresistive element** (200) comprises an elongated main body portion (220) which includes the central or active region...

...neck at an angle to the longitudinal axis (L) of the main body. In a **magnetoresistive** read **element** having this shape a single magnetic domain is maintained in the central region during reading, thereby avoiding **Barkhausen noise** . An integrated thin **film** magnetic head structure may comprise a plurality of thin film magnetic heads arranged on a single substrate, each **head** incorporating the **magnetoresistive element**

19/5,K/1 (Item 1 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00858542
Magnetoresistive effect head
Kopf mit magnetoresistivem Effekt
Tete a effet magnetoresistif
PATENT ASSIGNEE:
HITACHI, LTD., (204141), 6, Kanda Surugadai 4-chome, Chiyoda-ku, Tokyo 101, (JP), (applicant designated states: DE;FR;GB;IT;NL)
INVENTOR:
Nakamoto, Kazuhiro, 19-1-102, Ishinazakacho-1-chome, Hitachi-shi, (JP)
Kawato, Yoshiaki, 10-12, Suehirocho-3-chome, Hitachi-shi, (JP)
LEGAL REPRESENTATIVE:
Strehl Schubel-Hopf Groening & Partner (100941), Maximilianstrasse 54, 80538 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 790600 A2 970820 (Basic)
EP 790600 A3 980304
APPLICATION (CC, No, Date): EP 97102424 970214;
PRIORITY (CC, No, Date): JP 9626552 960214
DESIGNATED STATES: DE; FR; GB; IT; NL
INTERNATIONAL PATENT CLASS: G11B-005/39;
LEGAL STATUS (Type, Pub Date, Kind, Text):
Application: 970820 A2 Published application (A1with Search Report ;A2without Search Report)
Search Report: 980304 A3 Separate publication of the European or International search report
Examination: 980603 A2 Date of filing of request for examination: 980407
Examination: 990113 A2 Date of despatch of first examination report: 981130
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9708W3	2923
SPEC A	(English)	9708W3	10275
Total word count - document A			13198
Total word count - document B			0
Total word count - documents A + B			13198

...SPECIFICATION recording medium. The antiferromagnetic film 21 may be substituted by the permanent magnet.

The magnetic **domain control layer** 33 comprises a stacked **layer** having a permanent magnet film and an orientation control underlying **film** stacked. The magnetic **domain control layers** are arranged on the opposite sides of the widthwise area which intersects to the stack direction of the **magnetoresistive** effect film 10. The permanent magnet **film** of the magnetic **domain control layer** 33 may be formed of Co75))Cr10))Pt15)) or Co75))Cr10))Ta15)) and the orientation control underlying film may be formed of Cr. The permanent magnet **film** of the magnetic **domain control layer** 33 may be formed of an alloy such as Co80))Pt20)), or an alloy such as Co75))Cr10))Pt15)), Co75))Cr10))Ta20)), (CoPt, **CoCrPt** including oxide or CoCrTa including oxide) with an oxide such as ZrO2)), **SiO2**)) or Ta2))O5)) being added. In this case, the orientation control underlying film may be...

...controlled to the single magnetic domain state by the magnetic field generated by the magnetic **domain control layer** 33. The magnetic **domain control layer** 33 may be formed of a stacked layer of an antiferromagnetic film, a ferromagnetic film...

July 28, 2003

File 348:EUROPEAN PATENTS 1978-2003/Jul W03
(c) 2003 European Patent Office
File 349:PCT FULLTEXT 1979-2002/UB=20030724,UT=20030717
(c) 2003 WIPO/Univentio

Set	Items	Description
S1	18	AU='TAKAHASHI HIROMASA':AU='TAKAHASHI HIROMASA FUJITSU LIMITED'
S2	0	AU='ARAI R?'
S3	1	AU='SOEYA SUSUMU HITACHI LTD INTELL PROPERTY GROUP'
S4	0	S1 AND S3

3/5/1 (Item 1 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

01385953
Magnetic head, magnetic recording and reproducing apparatus, method for reproducing and recording magnetic recording information
Magnetkopf, Magnetaufzeichnungs- und wiedergabegerat, Magnetaufzeichnungsinformationswiedergabe- und aufzeichnungssmethode
Tete magnetique, appareil d'enregistrement et de reproduction magnetique, methode de reproduction et d'enregistrement d'information d'enregistrement magnetique
PATENT ASSIGNEE:
Hitachi, Ltd., (204145), 6 Kanda Surugadai 4-chome, Chiyoda-ku, Tokyo 101-8010, (JP), (Applicant designated States: all)
INVENTOR:
Ito, Kenchi, Hitachi,Ltd.Intell.Property Group, New Marunouchi Bldg., 5-1, Marunouchi 1-chome, Chiyoda-ku, Tokyo 100-8220, (JP)
Soeya, Susumu, Hitachi,Ltd.Intell.Property Group , New Marunouchi Bldg., 5-1, Marunouchi 1-chome, Chiyoda-ku, Tokyo 100-8220, (JP
LEGAL REPRESENTATIVE:
Beetz & Partner Patentanwalte (100712), Steinsdorfstrasse 10, 80538 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 1176585 A2 020130 (Basic)
APPLICATION (CC, No, Date): EP 2001106395 010320;
PRIORITY (CC, No, Date): JP 2000228874 000728
DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE; TR
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS: G11B-005/33; G11B-005/127; G11B-005/245; G11B-005/39; G11B-005/00

ABSTRACT EP 1176585 A2
There are provided a magnetic reproducing head and a magnetic recording head, which are easy to manufacture and suited for recording and reproducing by means of magnetic recording medium (810, 910, 1002) of narrow track size. The magnetic reproducing head is constituted by a GMR or TMR magnetic sensor (105, 705), and a flux guide (104, 106, 704, 706) for introducing a magnetic flux (503) into the magnetic sensor (105, 705), wherein at least a portion of the flux guide (104, 106, 704, 706) is constituted by a material which is capable of permitting the magnetic flux (503) to pass therethrough at a temperature of not lower than a predetermined temperature Tp, but not permitting the magnetic flux to pass therethrough at a temperature of lower than Tp. Light (501) is irradiated to only a portion of the flux guide (104, 106, 704, 706) to cause the temperature of the irradiated portion to rise up to Tp or more, thereby permitting a magnetic flux (503) to pass only through the irradiated portion, thus narrowing the track width of magnetic reproducing head on the occasion of detecting a magnetic recording information from the magnetic recording medium (810, 910, 1002).
ABSTRACT WORD COUNT: 199
NOTE:
Figure number on first page: 1A, 1B

LEGAL STATUS (Type, Pub Date, Kind, Text):
Application: 020130 A2 Published application without search report
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	200205	932
SPEC A	(English)	200205	5888
Total word count - document A			6820
Total word count - document B			0
Total word count - documents A + B			6820

July 28, 2003

File 344:Chinese Patents Abs Aug 1985-2003/Mar
(c) 2003 European Patent Office
File 347:JAPIO Oct 1976-2003/Mar(Updated 030703)
(c) 2003 JPO & JAPIO
File 350:Derwent WPIX 1963-2003/UD,UM &UP=200347
(c) 2003 Thomson Derwent

Set	Items	Description
S1	2028	AU='TAKAHASHI H':AU='TAKAHASHI H Y'
S2	96	AU='ARAI R' OR AU='ARAI REIKO'
S3	49	AU='SOEYA S':AU='SOEYA SUSUMU'
S4	1	S1 AND S2 AND S3

4/5/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014446462 **Image available**
WPI Acc No: 2002-267165/200231
XRAM Acc No: C02-079441
XRPX Acc No: N02-207697

Magnetoresistive sensor for use in magnetic head for reading back magnetically recorded information, includes magnetic domain control layers for controlling Barkhausen noise of magnetoresistive sensor layer

Patent Assignee: HITACHI LTD (HITA); ARAI R (ARAI-I); SOEYA S (SOEY-I); TAKAHASHI H (TAKA-I)
Inventor: **ARAI R ; SOEYA S ; TAKAHASHI H**

Number of Countries: 002 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20020003685	A1	20020110	US 2001811606	A	20010320	200231	B
JP 2002026426	A	20020125	JP 2000210704	A	20000706	200231	

Priority Applications (No Type Date): JP 2000210704 A 20000706
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020003685	A1		20	G11B-005/39	
JP 2002026426	A		13	H01L-043/08	

Abstract (Basic): US 20020003685 A1

NOVELTY - Magnetoresistive sensor includes magnetic domain control layers (106) for controlling Barkhausen noise of a magnetoresistive sensor layer (105). The magnetic domain control layers are disposed on and in contact with opposite ends of the magnetoresistive sensor layer in a region from the end surface of a media-opposed surface side of the magnetoresistive sensor layer to the depth position.

DETAILED DESCRIPTION - A magnetoresistive sensor includes a substrate (101); a lower and an upper magnetic shield layer (103,109); a magnetoresistive sensor layer between the lower and upper magnetic shields; an electrode terminal for flowing a signal current perpendicular to the magnetoresistive sensor layer; and magnetic domain control layers for controlling Barkhausen noise of the magnetoresistive sensor layer. The magnetic domain control layers are made of a material having a specific resistance not less than 10 m.ohm.cm. They are disposed on and in contact with opposite ends of the magnetoresistive sensor layer in a region from the end surface of a media-opposed surface side of the magnetoresistive sensor layer to the depth position (110). INDEPENDENT CLAIMS are included for:

(I) a combined magnetic head mounting (a) a write element and (b) a read element comprising the above magnetoresistive sensor; and

(II) a magnetic disk apparatus, comprising (i) a magnetic recording media, (ii) a magnetic read/write head comprising the above magnetoresistive sensor, (iii) a read/write circuit, (iv) an actuator, and (v) mechanism for controlling the read/write operation.

USE - The sensor is used for magnetic head for reading back magnetically recorded information. The magnetic head is used in magnetic disk apparatus (all claimed).

ADVANTAGE - The magnetoresistive sensor has excellent reproducing resolution in magnetic read and write.

DESCRIPTION OF DRAWING(S) - The drawing shows a diagram showing the sectional structure of the media-opposed surface side of the inventive magnetoresistive sensor and the position of a magnetic domain control layer.

substrate (101)
lower magnetic shield layer (103)
magnetoresistive sensor layer (105)
magnetic domain control layers (106)
upper magnetic shield layer (109)

depth position (110)
pp; 20 DwgNo 1/22
Title Terms: MAGNETORESISTIVE; SENSE; MAGNETIC; HEAD; READ; BACK; MAGNETIC; RECORD; INFORMATION; MAGNETIC; DOMAIN; CONTROL; LAYER; CONTROL; BARKHAUSEN; NOISE; MAGNETORESISTIVE; SENSE; LAYER
Derwent Class: L03; T03
International Patent Class (Main): G11B-005/39; H01L-043/08
International Patent Class (Additional): G01R-033/09
File Segment: CPI; EPI

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File   8:Ei Compendex(R) 1970-2003/Jul W3
         (c) 2003 Elsevier Eng.  Info. Inc.
File  35:Dissertation Abs Online 1861-2003/Jun
         (c) 2003 ProQuest Info&Learning
File  65:Inside Conferences 1993-2003/Jul W4
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         (c) 2003 Info. Today Inc.
File  94:JICST-EPlus 1985-2003/Jul W3
         (c)2003 Japan Science and Tech Corp(JST)
File 603:Newspaper Abstracts 1984-1988
         (c)2001 ProQuest Info&Learning
File 483:Newspaper Abs Daily 1986-2003/Jul 25
         (c) 2003 ProQuest Info&Learning
File   6:NTIS 1964-2003/Jul W4
         (c) 2003 NTIS, Intl Cpyrght All Rights Res
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         (c) 2003 INIST/CNRS
File 202:Info. Sci. & Tech. Abs. 1966-2003/Jun 30
         (c) Information Today, Inc
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
         (c) 1998 Inst for Sci Info
File  34:SciSearch(R) Cited Ref Sci 1990-2003/Jul W3
         (c) 2003 Inst for Sci Info
File  99:Wilson Appl. Sci & Tech Abs 1983-2003/Jun
         (c) 2003 The HW Wilson Co.
File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13
         (c) 2002 The Gale Group

Set     Items   Description
S1     497350   MAGNETORESISTIV? OR MR OR GMR
S2    4991235   SENSOR? OR HEAD? OR ELEMENT? OR MRAM OR MAGNETIC?()RAM
S3    5035023   FILM? OR THINFILM? OR LAYER? OR OVERLAY? OR OVERLAID? OR L-
             AMIN? OR LAMEL? OR MULTILAYER? OR SHEET OR LEAF? OR FOIL? OR -
             COAT? OR TOPCOAT?
S4    1376608   OVERCOAT? OR VENEER? OR SHEATH? OR COVER? OR ENVELOP? OR E-
             NCAS? OR ENWRAP? OR OVERSPREAD? OR  UNDERLAY? OR UNDERLAID?
S5       3357   BARKHAUSEN(2N)NOISE OR MBN OR DOMAIN()CONTROL? OR LONGITUD-
             INAL?()BIAS
S6         38   10()M()CM OR MILLI()OHM()CENTIMETER? OR M()OHM()CM
S7     807918   SIO2 OR SI02 OR GLASS OR SILICON()DIOXIDE
S8        994   COCRPT
S9      13299   S1(3N)S2
S10   6162350   S3 OR S4
S11       247   S5(5N)S10
S12        75   S9 AND S11
S13         0   S12 AND S7 AND S8
S14         3   S12 AND (S7 OR S8)
S15         2   RD (unique items)
S16         0   S12 AND S6
S17         0   S7 AND S8 AND S5
S18       119   S7 AND S8
S19         0   S18 AND S5
S20         4   S18 AND S1
S21         2   RD (unique items)
S22         2   S21 NOT S15
S23       339   S1 AND S5
S24         0   S23 AND S6
S25         0   S23 AND S7 AND S8
S26         7   S23 AND (S7 OR S8)
S27         4   RD (unique items)
S28         3   S27 NOT (S22 OR S15)
S29     33278   AU=(TAKAHASHI, H? OR TAKAHASHI H?)
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S30	814	AU=(ARAI, R? OR ARAI R?)
S31	69	AU=(SOEYA, S? OR SOEYA S?)
S32	0	S29 AND S30 AND S31
S33	120	S1 AND (S29 OR S30 OR S31)
S34	0	S33 AND S5
S35	2	S33 AND (S7 OR S8)
S36	2	RD (unique items)

15/3,K/1 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

03086990 E.I. Monthly No: EI9107079436
Title: Effect of film thickness on the magnetic and electrical properties of permalloy magnetoresistive sensors .
Author: Tanabe, Hideo; Kitada, Masahiro
Corporate Source: Hitachi, Ltd, Tokyo, Jpn
Source: Nippon Kinzoku Gakkaishi/Journal of the Japan Institute of Metals v 55 n 1 Jan 1991 p 98-104
Publication Year: 1991
CODEN: NIKGAV ISSN: 0021-4876
Language: Japanese

Title: Effect of film thickness on the magnetic and electrical properties of permalloy magnetoresistive sensors .
Abstract: The effect of film thickness on the magnetic and electrical properties of permalloy **magnetoresistive sensors** was investigated. The thickness of the thin films are between 15 and 200 nm. The films were deposited on **glass** substrates by electron beam deposition and formed into 10 mu m multiplied by 50 mu...

...demagnetizing field. The half width of the magnetoresistive response curve and output voltage of the **magnetoresistive sensor** decrease with increasing film thickness because of the increasing demagnetizing field. The discontinuity of output voltage due to the Barkhausen effect decreases with increasing **film** thickness. **Barkhausen noise** is related to the occurrence and sudden extinction of buckling magnetic domains in thinner films...
Identifiers: BARKHAUSEN NOISE; **MAGNETORESISTIVE SENSORS** ; MAGNETIC COERCIVITY; PATTERNING; ALLOY PERMALLOY; FILM THICKNESS

15/3,K/2 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

5128180 INSPEC Abstract Number: B9601-3120J-004
Title: Spin-valve sensors with domain control **hard magnet** layers
Author(s): Kanai, H.; Kane, J.; Aoshima, K.; Kanamine, M.; Uehara, Y.
Author Affiliation: Fujitsu Labs. Ltd., Atsugi, Japan
Journal: IEEE Transactions on Magnetics Conference Title: IEEE Trans. Magn. (USA) vol.31, no.6, pt.1 p.2612-14
Publication Date: Nov. 1995 Country of Publication: USA
CODEN: IEMGAQ ISSN: 0018-9464
U.S. Copyright Clearance Center Code: 0018-9464/95/$04.00
Conference Title: INTERMAG '95. 1995 IEEE International Magnetics Conference
Conference Date: 18-21 April 1995 Conference Location: San Antonio, TX, USA
Language: English
Subfile: B

Title: Spin-valve sensors with domain control **hard magnet** layers
...Abstract: of 2 mu m and a track-width of less than 2 mu m using **CoCrPt** hard magnets (4 pi Mr=5500 G, Hc=1000 Oe) as a **domain control layer** . **Barkhausen noise** was completely suppressed by a longitudinal biasing field from the **CoCrPt** layers. The bias state was improved by applying a strong ferromagnetic exchange coupling field of...

... pinned NiFe layers through a 14 AA-thick Cu interlayer. We have also fabricated shielded **CoCrPt** magnet-biased spin-valve read heads with a track-width of 1.7 mu m...

...Identifiers: **domain** **control** hard magnet **layers** ; ...

... **MR** **heads** ; ...

... **CoCrPt**

22/3,K/1 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

05811019 E.I. No: EIP01204958368
Title: Magnetic properties of ion beam deposited CoPt and CoCrPt **films for hard bias application in high density** magnetoresistive **heads**
Author: Leng, Q.; Mao, M.; Hiner, C.; Miloslavsky, L.; Miller, M.; Tran, S.; Qian, C.; Tong, H.C.
Corporate Source: Read-Rite Corp, Fremont, CA, United States
Conference Title: Proceedings of the 1999 International Magnetics Conference (INTERMAG '99)
Conference Location: Kyongju, South Korea Conference Date: 19990518-19990521
E.I. Conference No.: 56196
Source: IEEE Transactions on Magnetics v 35 n 5 pt 1 Sep 1999. p 2553-2555
Publication Year: 1999
CODEN: IEMGAQ ISSN: 0018-9464
Language: English

Title: Magnetic properties of ion beam deposited CoPt and CoCrPt **films for hard bias application in high density** magnetoresistive **heads**
...Abstract: remnant magnetization in ion beam deposited (IBD) Cr/CoPt films as compared to IBD Cr/ **CoCrPt** films. In addition, the magnetic properties of these hard bias films exhibit a strong dependence...

...0) crystallographic orientation were measured in films grown on substrates in the preference order of **glass** , Si/Al//2O//3 and Si. CoPt films grown on CrV underlayer show lower H...

...c exhibits a maximum with increasing Cr underlayer thickness for both Cr/CoPt and Cr/ **CoCrPt** films. This Cr thickness dependence of H//c is correlated well with that of Co...
Identifiers: Cobalt platinum alloys; Cobalt chromium platinum alloys; High density **magnetoresistive** heads; Ion beam deposition

22/3,K/2 (Item 2 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

05704925 E.I. No: EIP00115403936
Title: Effects of surface oxidization of amorphous Ni-based alloy seed layers on noise of CoCrPt **/CrTi media**
Author: Matsuda, Y.; Sakamoto, K.; Takahashi, Y.; Tanahashi, K.; Kanbe, T.; Katou, A.; Hosoe, Y.
Corporate Source: Hitachi, Ltd, Kanagawa, Jpn
Conference Title: 2000 IEEE International Magnetics Conference-2000 IEEE INTERMAG
Conference Location: Toronto, Ont, Can Conference Date: 20000409-20000413
E.I. Conference No.: 57511
Source: Digests of the Intermag Conference 2000. IEEE, Piscataway, NJ, USA,00CB37078. p BP-10
Publication Year: 2000
CODEN: DICODA ISSN: 0074-6843
Language: English

Title: Effects of surface oxidization of amorphous Ni-based alloy seed layers on noise of CoCrPt **/CrTi media**
...Abstract: and read/write performance of the media was studied. Recording performance was evaluated by a **GMR** head. It was found that the surface oxidation affects differently for the two kinds of...

...Descriptors: thin films; Chromium alloys; Spurious signal noise; Amorphous alloys; Nickel alloys; Oxidation; Crystallography; Sputter deposition; **Glass** ; Magnetization

28/3,K/1 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

04290364 E.I. No: EIP95112931997
Title: Spin-valve sensors with domain control **hard magnet layers**
Author: Kanai, H.; Kane, J.; Aoshima, K.; Kanamine, M.; Uehara, Y.
Corporate Source: Fujitsu Ltd, Atsugi, Jpn
Conference Title: Proceedings of the 1995 33rd Annual IEEE International Magnetics Conference (INTERMAG'95). Part 1 (of 3)
Conference Location: San Antonio, TX, USA Conference Date: 19950418-19950421
E.I. Conference No.: 43986
Source: IEEE Transactions on Magnetics v 31 n 6 pt 1 Nov 1995. p 2612-2614
Publication Year: 1995
CODEN: IEMGAQ ISSN: 0018-9464
Language: English

Title: Spin-valve sensors with domain control **hard magnet layers**
...Abstract: of 2 mu m and a track-width of less than 2 mu m using **CoCrPt** hard magnets (4 pi **Mr** equals G, Hc equals 1000 Oe) as a **domain control** layer. **Barkhausen noise** was completely suppressed by a longitudinal biasing field from the **CoCrPt** layers. The bias state was improved by applying a strong ferromagnetic exchange coupling field of... ...pinned NiFe layers through a 14 angstrom-thick Cu interlayer. We have also fabricated shielded **CoCrPt** magnet-biased spin-valve read heads with a track-width of 1.7 mu m. The heads had no **Barkhausen noise** and very low crosstalk noise. (Author abstract) 5 Refs.
Identifiers: Spin valve sensors; Hard magnet layers; Track width; **Barkhausen noise** ; Longitudinal biasing field; Ferromagnetic exchange coupling effect

28/3,K/2 (Item 1 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

01691536 ORDER NO: AAD99-21594
BIASING MATERIALS FOR ANISOTROPIC MAGNETORESISTIVE **AND SPIN-VALVE READ HEADS**
Author: DEVASAHAYAM, ADRIAN JOSHUA
Degree: PH.D.
Year: 1998
Corporate Source/Institution: CARNEGIE-MELLON UNIVERSITY (0041)
Source: VOLUME 60/02-B OF DISSERTATION ABSTRACTS INTERNATIONAL. PAGE 695. 234 PAGES

BIASING MATERIALS FOR ANISOTROPIC MAGNETORESISTIVE **AND SPIN-VALVE READ HEADS**

...lower signal levels and lower sensitivities. Dedicated heads, optimized for read-back, using the anisotropic **magnetoresistive** (AMR) and giant **magnetoresistive** (**GMR**) effects are more attractive. The output signal from devices based on both of these phenomena...

...motion in the sensor element. One of the more common methods of suppressing this ‘ **Barkhausen noise** ’ employs the exchange coupling between antiferromagnetic and ferromagnetic layers to ensure that the ferromagnetic...

...this thesis, the performance of CoNiO, NiO, NiMn and IrMn as exchange biasing materials and **CoCrPt** as a permanent magnet has been evaluated. The significant material properties investigated were biasing fields...

...valves fabricated with IrMn as the pinning material showed excellent magnetic and thermal properties with **MR** ratios as high as 10% and good spin-valve responses up to 210°C...

...with a finite-size-scaling phenomenon. Substrate bias was found to enhance the coercivity of **CoCrPt** permanent magnets when deposited on 25 Å Cr underlayers. These magnets had coercivities in the...

...1.6 <math> <f> <g>m</g></f> </math>m trackwidths showed some signs of **Barkhausen noise** , while NiMn stabilized elements were noise free. IrMn pinned spin-valves had very good performance for narrow trackwidth elements, with **MR** ratios as high as 5% and pinning fields of 650 Oe for 0.5 <math...

28/3,K/3 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

03647804 Genuine Article#: PU429 No. References: 10
Title: THIN-FILM MAGNETIC SENSOR USING HIGH-FREQUENCY MAGNETO-IMPEDANCE (HFMI) EFFECT
Author(s): SENDA M; ISHII O; KOSHIMOTO Y; TOSHIMA T
Corporate Source: NIPPON TELEGRAPH & TEL PUBL CORP,INTERDISCIPLINARY RES LABS/TOKAI/IBARAKI 31911/JAPAN/
Journal: IEEE TRANSACTIONS ON MAGNETICS, 1994, V30, N6 (NOV), P4611-4613
ISSN: 0018-9464
Language: ENGLISH Document Type: ARTICLE (Abstract Available)

...Abstract: and a large voltage change ratio (Delta V pp/V pp(0) : corresponds to the **MR** ratio), a strip pattern, a closed magnetic circuit, and a NIFe/ **SIO2** multilayer film structure are adopted for the magnetic films of the sensor. A Delta V...

...applying an external magnetic field of several Oe. Moreover there is no hysteresis or no **Barkhausen noise** in this sensor, which has a magnetic film width of 10 mu m. In terms...

36/3,K/1 (Item 1 from file: 94)
DIALOG(R)File 94:JICST-EPlus

02051170 JICST ACCESSION NUMBER: 94A0525767 FILE SEGMENT: JICST-E
Electrodeposition of Co/Cu Composition-Modulated Alloy Film and its Magnetoresistive **Effect.**
KAINUMA SEIZO (1); **TAKAHASHI HIDEKI** (2)
(1) Ashikaga Inst. of Technol.; (2) Ashikagakodai Daigakuin
Ashikaga Kogyo Daigaku Kenkyu Shuroku(Research Reports Ashikaga Institute of Technology), 1994, NO.20, PAGE.103-109, FIG.9, TBL.3, REF.13
JOURNAL NUMBER: G0313AAD ISSN NO: 0287-086X CODEN: KSADD
UNIVERSAL DECIMAL CLASSIFICATION: 539.23:669 537.311.1:669
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication

Electrodeposition of Co/Cu Composition-Modulated Alloy Film and its Magnetoresistive **Effect.**
; **TAKAHASHI HIDEKI** (2)
...ABSTRACT: of Cu ions by dual current pulse galvanostatic technique. An electrodeposition was performed onto the **glass** substrate on which Cu and Permalloy thin layers were evaporated. Co and Cu layers were...
...alloys. The saturation magnetic field was found to be larger than 900kA/m and the **magnetoresistive** effect of about 2.4% was attained. (author abst.)

36/3,K/2 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

02516847 Genuine Article#: LH553 No. References: 58
Title: STAGE-SPECIFIC GLYCOSPHINGOLIPIDS FROM AMASTIGOTE FORMS OF LEISHMANIA (L) AMAZONENSIS - IMMUNOGENICITY AND ROLE IN PARASITE BINDING AND INVASION OF MACROPHAGES
Author(s): STRAUS AH; LEVERY SB; JASIULIONIS MG; SALYAN MEK; STEELE SJ; TRAVASSOS LR; HAKOMORI SI; **TAKAHASHI HK**
Corporate Source: ESCOLA PAULISTA MED,DEPT BIOCHEM,CP 20372/BR-04023 SAO PAULO//BRAZIL/; ESCOLA PAULISTA MED,DEPT BIOCHEM,CP 20372/BR-04023 SAO PAULO//BRAZIL/; ESCOLA PAULISTA MED,DEPT MICROBIOL IMMUNOL & PARASITOL,DIV CELL BIOL/BR-04023 SAO PAULO//BRAZIL/; BIOMEMBRANE INST/SEATTLE//WA/98119; UNIV WASHINGTON,DEPT PATHOBIOL/SEATTLE//WA/98195
Journal: JOURNAL OF BIOLOGICAL CHEMISTRY, 1993, V268, N18 (JUN 25), P 13723-13730
ISSN: 0021-9258
Language: ENGLISH Document Type: ARTICLE (Abstract Available)

Author(s): STRAUS AH; LEVERY SB; JASIULIONIS MG; SALYAN MEK; STEELE SJ; TRAVASSOS LR; HAKOMORI SI; **TAKAHASHI HK**
...Research Fronts: OF HEPARIN; ACIDIC POLYSACCHARIDE; CARBOHYDRATES IN GLYCOPROTEINS)
91-3106 001 (IDENTIFICATION OF A 40X10(3) **MR** CENTROMERE-ASSOCIATED PROTEIN; ACTIN ISOFORM EXPRESSION IN CULTURED ARTERIAL SMOOTH-MUSCLE CELLS)
91-3207 001 (TRYPANOSOMA-CRUZI TRYPOMASTIGOTES; IDENTIFICATION OF AN EPIMASTIGOTE-SPECIFIC **GLASS** -ADHERENT SURFACE PEPTIDE; KINETOPLAST DNA MINICIRCLE)

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File  16:Gale Group PROMT(R) 1990-2003/Jul 28
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         (c)2003 The Gale Group
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         (c) 2003 The HW Wilson Co.
File 674:Computer News Fulltext 1989-2003/Jul W3
         (c) 2003 IDG Communications
File   9:Business & Industry(R) Jul/1994-2003/Jul 25
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         (c) 1999 AAAS
File 369:New Scientist 1994-2003/Jul W3
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         (c) 2003 ProQuest
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         (c) 2003 CMP Media, LLC
File  20:Dialog Global Reporter 1997-2003/Jul 28
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File 696:DIALOG Telecom. Newsletters 1995-2003/Jul 28
         (c) 2003 The Dialog Corp.
File 634:San Jose Mercury  Jun 1985-2003/Jul 26
         (c) 2003 San Jose Mercury News
File 553:Wilson Bus. Abs. FullText 1982-2003/Jun
         (c) 2003 The HW Wilson Co
File 635:Business Dateline(R) 1985-2003/Jul 26
         (c) 2003 ProQuest Info&Learning

Set     Items   Description
S1    4867357   MAGNETORESISTIV? OR MR OR GMR
S2   12554141   SENSOR? OR HEAD? OR ELEMENT? OR MRAM OR MAGNETIC?()RAM
S3    4945454   FILM? OR THINFILM? OR LAYER? OR OVERLAY? OR OVERLAID? OR L-
             AMIN? OR LAMEL? OR MULTILAYER? OR SHEET OR LEAF? OR FOIL? OR -
             COAT? OR TOPCOAT?
S4    6240844   OVERCOAT? OR VENEER? OR SHEATH? OR COVER? OR ENVELOP? OR E-
             NCAS? OR ENWRAP? OR OVERSPREAD? OR  UNDERLAY? OR UNDERLAID?
S5       4701   BARKHAUSEN(2N)NOISE OR MBN OR DOMAIN()CONTROL? OR LONGITUD-
             INAL?()BIAS
S6          4   10()M()CM OR MILLI()OHM()CENTIMETER? OR M()OHM()CM
S7     925174   SIO2 OR SI02 OR GLASS OR SILICON()DIOXIDE
S8         79   COCRPT
S9      97167   S1(3N)S2
S10  10326306   S3 OR S4
S11        49   S5(5N)S10
S12         4   S9(S)S11
S13         0   S12(S)S7(S)S8
```

S14	0	S12(S)(S7 OR S8)
S15	0	RD (unique items)
S16	0	S12(S)S6
S17	0	S7(S)S8(S)S5
S18	13	S7(S)S8
S19	0	S18(S)S5
S20	0	S18(S)S1
S21	0	RD (unique items)
S22	0	S21 NOT S15
S23	37	S1(S)S5
S24	0	S23(S)S6
S25	0	S23(S)S7(S)S8
S26	0	S23(S)(S7 OR S8)
S27	0	RD (unique items)
S28	0	S27 NOT (S22 OR S15)
S29	307	AU=(TAKAHASHI, H? OR TAKAHASHI H?)
S30	12	AU=(ARAI, R? OR ARAI R?)
S31	6	AU=(SOEYA, S? OR SOEYA S?)
S32	0	S29(S)S30(S)S31
S33	0	S1(S)(S29 OR S30 OR S31)
S34	0	S33(S)S5
S35	0	S33(S)(S7 OR S8)
S36	0	RD (unique items)
S37	4	RD S12 (unique items)
S38	12	RD S18 (unique items)
S39	12	S38 NOT S37
S40	31	RD S23 (unique items)
S41	27	S40 NOT (S39 OR S37)

37/3,K/1 (Item 1 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

04304025 SUPPLIER NUMBER: 19536677
Stability of soft-adjacent- layer magnetoresistive heads **with patterned exchange** longitudinal bias .**(Proceedings of the 41st Annual Conference on Magnetism and Magnetic Materials)**
Zhu, Jian-Gang; O'Connor, Daniel J.
Journal of Applied Physics, v81, n8, p4890(3)
April 15, 1997
ISSN: 0021-8979 LANGUAGE: English RECORD TYPE: Citation

Stability of soft-adjacent- layer magnetoresistive heads **with patterned exchange** longitudinal bias .**(Proceedings of the 41st Annual Conference on Magnetism and Magnetic Materials)**

37/3,K/2 (Item 2 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

04222871 SUPPLIER NUMBER: 19264654
Characterization of exchange coupling at NiFe-CoPt interface.(The 1996 IEEE International Magnetics Conference)(INTERMAG '96)
Zou, Pei; Ryan, Patrick J.; Yang, Zhijun; Kryder, Mark H.
IEEE Transactions on Magnetics, v32, n5, p3428(3)
Sep, 1996
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

...AUTHOR ABSTRACT: seen as an initial step toward controlling and optimizing the interfacial exchange field that provides **longitudinal bias** for **magnetoresistive heads** with **overlaid** structures.

37/3,K/3 (Item 3 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

03257439 SUPPLIER NUMBER: 15193378
Influence of longitudinal bias field on magnetization distribution in magnetoresistive head with shield films.
Ishikawa, Chiaki; Suzuki, Kaori; Yoshida, Kazuetsu; Sugita, Yutaka; Shinagawa, Kiminari; Nakatani, Yoshinobu; Hayashi, Nobuo
Journal of Applied Physics, v75, n2, p1036(5)
Jan 15, 1994
ISSN: 0021-8979 LANGUAGE: English RECORD TYPE: Abstract

ABSTRACT: Magnetization distribution in magnetoresistive (MR) **film** is affected by **domain control films** when the track width of the **MR head** is narrower than 2 micrometers. The magnetization distribution in the MR is calculated by solving the three-dimensional field and analyzing the longitudinal bias field. The influence of the **domain control film** on the **MR head** can be studied using antiferromagnetic and permanent magnetic films.

37/3,K/4 (Item 4 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

03128319 SUPPLIER NUMBER: 15154050
Dependence of Barkhausen noise **on** film **parameters in shielded** MR heads . (magnetoresistive) **(The 1993 IEEE International Magnetics Conference, Folkets Hus City Conference Center, Stockholm, Sweden, April**

13-16, 1993)(Part II: Magnetic Recording Heads)
Ramesh, Mahadevan; Dee, Richard H.; Franzel, Kenneth S.
IEEE Transactions on Magnetics, v29, n6, p3817(3)
Nov, 1993
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Citation

Dependence of Barkhausen noise **on** film **parameters in shielded** MR heads . **(** magnetoresistive **) (The 1993 IEEE International Magnetics Conference, Folkets Hus City Conference Center, Stockholm, Sweden, April 13...**

39/3,K/1 (Item 1 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

06300494 SUPPLIER NUMBER: 94130418
2.5-inch disk patterned media prepared by an artificially assisted self-assembling method. (Abstract)
Naito, Katsuyuki; Hieda, Hiroyuki; Sakurai, Masatoshi; Kamata, Yoshiyuki; Asakawa, Koji
IEEE Transactions on Magnetics, 38, 5, 1949(3)
Sept, 2002
DOCUMENT TYPE: Abstract ISSN: 0018-9464 LANGUAGE: English
RECORD TYPE: Abstract

AUTHOR ABSTRACT: Circumferential magnetic patterned media were prepared on a 2.5-inch-diameter **glass** plate and on a 3-in-diameter silicon plate. A Ni master disk possessing spiral...

...a 400-nm-width groove was pressed into a resist film on a CoPt or **CoCrPt** film to transfer the spiral patterns. A dibiock copolymer solution was cast into the obtained...

39/3,K/2 (Item 2 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

05936866 SUPPLIER NUMBER: 78967158
Effects of Surface Oxidization of Amorphous Ni-Based Alloy Seed Layers on Noise in CoCrPt/CrTi Media.
Matsuda, Y.; Sakamoto, K.; Takahashi, Y.; Tanahashi, K.; Kanbe, T.; Katou, A.; Hosoe, Y.
IEEE Transactions on Magnetics, 37, 4, 3053
July, 2001
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

...AUTHOR ABSTRACT: amorphous seed layers of NiCrZr and NiTa have been developed to reduce the noise of **CoCrPt** /CrTi thin film media on a **glass** substrate. By exposing the surfaces of the Ni-based amorphous seed layers to low pressure oxygen of the order of (10.sup.-3) Pa, the crystal orientation of the **CoCrPt** magnetic layer is changed from random-like to (11.0), and the magnetic crystal grain...

39/3,K/3 (Item 3 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

05934742 SUPPLIER NUMBER: 78966800
Nanoscale Protection for CoCrPt Thin Film Magnetic Recording Media.
Zhang, J.; Xu, Y. F.; Wang, J. P.; Pock, C. K.; Ji, R.; Chong, T. C.
IEEE Transactions on Magnetics, 37, 4, 1849
July, 2001
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

AUTHOR ABSTRACT: In this study, CrMn, **CoCrPt** -C multilayers and carbon overcoat were sequentially deposited on the NiAl coated **glass** substrate as underlayer, granular media layer, and protect layer by DC sputtering. Samples with various...

...and low temperature annealed interlayer carbon can provide grain-sized or nanoscale protection to the **CoCrPt** magnetic media. Carbon concentration within/above the top of **CoCrPt** -C granular thin film plays an important roles in the suppression of corrosion.

Index Terms...

39/3,K/4 (Item 4 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

05933221 SUPPLIER NUMBER: 78966737
High Coercivity Co-Alloy Thin Films on Polymer Substrates.
Bian, Bo; Bain, James A.; Kwon, Soon-Ju; Laughlin, David E.
IEEE Transactions on Magnetics, 37, 4, 1640
July, 2001
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

AUTHOR ABSTRACT: Films of (1010) textured **CoCrPt** have been sputtered on polymer substrates for use as thin film tape media. Underlayers of...

...NiAl underlayers sputtered on tape substrates have a (112) growth texture, like they do on **glass** . Film coercivity varied as a function of intermediate layers used, with the highest value of...

...these intermediate layers was hexagonal with a (1010) texture and low stacking fault density. The **CoCrPt** layers deposited on these CoCrMn layers had uniform grains with a lower stacking fault density, possibly due to grain-to-grain epitaxial growth of **CoCrPt** on CoCrMn.
Index Terms--Co-alloy thin films, coercivity, polymer substrates, sputtering, tape recording.

39/3,K/5 (Item 5 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

05726493 SUPPLIER NUMBER: 72611220
HCP Structured CoCrMn Underlayer for Co-Based Longitudinal Magnetic Recording Media.
Song, Hajung; Hong, Soo-Youl; Kwon, Soon-Ju; Lee, Taek-Dong; Shin, Kyung-Ho
IEEE Transactions on Magnetics, 36, 5, 2300
Sept, 2000
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

AUTHOR ABSTRACT: Nonmagnetic hcp CoCrMn alloy was investigated with a view of new underlayer for **CoCrPt** longitudinal magnetic recording media. Magnetic properties and crystallographic textures of **CoCrPt** /CoCrMn thin films were compared with those of **CoCrPt** /Cr thin films. Only Co (10.0) and (11.0) peaks were observed in **CoCrPt** /CoCrMn thin films deposited on **glass** substrates without any bcc-type underlayer. **CoCrPt** /CoCrMn thin films showed higher coercivity and narrower grain size distribution than **CoCrPt** /Cr thin films prepared under same conditions. **CoCrPt** /CoCrMn thin films showed better lattice matching and grain-to-grain growth than **CoCrPt** /Cr thin films and no transition layer between a magnetic layer and an underlayer.
Index...

39/3,K/6 (Item 6 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

05357133 SUPPLIER NUMBER: 60272534
RF-bias effect on structural and magnetic properties in CoCrPt/(Cr.sub.25)(Ti.sub.25)/CoTi trilayer type longitudinal recording media.
Hong, S. Y.; Shin, K. H.; Lee, T. D.
IEEE Transactions on Magnetics, 35, 5, 2664

Sept, 1999
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

AUTHOR ABSTRACT: The effects of an rf substrate bias on the structural and magnetic properties of the **CoCrPt** /(Cr.sub.75)(Ti.sub.25)/CoTi trilayer type longitudinal recording media deposited on **glass** substrate have been studied. It was found that the coercivity of 30 nm thick **CoCrPt** films deposited on (Cr.sub.75)(Ti.sub.25)/CoTi underlayer was 4000 Oe by...

...the rf-bias to substrate improved the Co (1010) and (1120) plane textures of the **CoCrPt** magnetic layer. From RBS analyses, Pt content of the **CoCrPt** magnetic layer increased with rf-bias power. In addition to the Pt increase, a better lattice matching between the **CoCrPt** magnetic layer and the (Cr.sub.75)(Ti.sub.25)/CoTi underlayer was obtained through the expansion of the lattice parameter, "a" and "c" of Co in the **CoCrPt** with the substrate bias. These two factors are thought to be the origin of the...

39/3,K/7 (Item 7 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

05355450 SUPPLIER NUMBER: 60272526
Noise Reduction by Surface Oxidization of a CoCrZr Seed Layer on Glass **Substrates for** CoCrPt **/CrTi Thin Film Media.**
Matsuda, Y.; Yahisa, Y.; Sakamoto, K.; Takahashi, Y.; Katou, A.; Hosoe, Y.
IEEE Transactions on Magnetics, 35, 5, 2640
Sept, 1999
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

Noise Reduction by Surface Oxidization of a CoCrZr Seed Layer on Glass **Substrates for** CoCrPt **/CrTi Thin Film Media.**

...AUTHOR ABSTRACT: a CoCrZr seed layer has been developed. This method can control the microstructure of a **CoCrPt** /CrTi thin film medium on the **glass** substrate. By exposing the surface of the CoCrZr seed layer to just a little oxygen...

39/3,K/8 (Item 8 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

05355438 SUPPLIER NUMBER: 60272499
Magnetic Properties of Ion Beam Deposited CoPt and CoCrPt Films for Hard Bias Application in High Density Magnetoresistive Heads.
Leng, Q.; Mao, M.; Hiner, C.; Miloslavsky, L.; Miller, M.; Tran, S.; Qian, C.; Tong, H.C.
IEEE Transactions on Magnetics, 35, 5, 2553
Sept, 1999
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

...AUTHOR ABSTRACT: remnant magnetization in ion beam deposited (IBD) Cr/CoPt films as compared to IBD Cr/ **CoCrPt** films. In addition, the magnetic properties of these hard bias films exhibit a strong dependence...

...0) crystallographic orientation were measured in films grown on substrates in the preference order of **glass** , Si/(Al.sub.2)(O.sub.3) and Si. CoPt films grown on CrV underlayer...

...c) exhibits a maximum with increasing Cr underlayer thickness for both Cr/CoPt and Cr/ **CoCrPt** films. This Cr thickness dependence of (H.sub.2) is correlated well with that of...

39/3,K/9 (Item 9 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

05103142 SUPPLIER NUMBER: 54659408
Role of a paramagnetic amorphous CoZr seed layer in CoCrPt/Ti perpendicular recording media. (Proceedings of the 43rd Annual Conference on Magnetism and Magnetic Materials)
Lee, I.S.; Ryu, H.; Lee, H.J.; Lee, T.D.
Journal of Applied Physics, 85, 8, 6133(3)
April 15, 1999
ISSN: 0021-8979 LANGUAGE: English RECORD TYPE: Abstract

...ABSTRACT: to analyze the influence of the CoZr layer on the magnetic and structural characteristics of **CoCrPt** layer. The films were deposited on a **glass** substrate using a direct-current magnetron sputtering technique. An inductively coupled plasma spectrometer was utilized...

...the films. Experimental results indicated that the prior deposition of a fresh CoZr45 layer on **glass** substrates leads to the formation of finer and better oriented titanium grains.

39/3,K/10 (Item 10 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

05102821 SUPPLIER NUMBER: 54659084
Effects of CoCrZr seed layer on noise properties and microstructure of CoCrPt media. (Proceedings of the 43rd Annual Conference on Magnetism and Magnetic Materials)
Kanbe, T.; Tamai, I.; Takahashi, Y.; Tanahashi, K.; Ishikawa, A.; Hosoe, Y.
Journal of Applied Physics, 85, 8, 4717(3)
April 15, 1999
ISSN: 0021-8979 LANGUAGE: English RECORD TYPE: Abstract

...ABSTRACT: to analyze the influence of CoCrZr seed layer on the noise characteristics and microstructure of **CoCrPT** media. The films were deposited on chemically enforced soda-lime **glass** substrates by direct current magnetron sputtering. Experimental results indicated that the microstructure is very sensitive...

39/3,K/11 (Item 11 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

05102682 SUPPLIER NUMBER: 54658945
Enhancement of magnetic properties in CoCrPt longitudinal recording media by Cr(sub 75)Ti(sub 25)/CoTi bilayer. (Proceedings of the 43rd Annual Conference on Magnetism and Magnetic Materials)
Hong, S.Y.; Lee, T.D.; Shin, K.H.
Journal of Applied Physics, 85, 8, 4298(3)
April 15, 1999
ISSN: 0021-8979 LANGUAGE: English RECORD TYPE: Abstract

...ABSTRACT: to analyze the effects of the Cr75Ti25/CoTi bilayer on magnetic and crystallographic characteristics in **CoCrPt** longitudinal recording media. Films were deposited on **glass** substrates that were heated at 250 degrees C using the dc magnetron sputtering technique. Results...

39/3,K/12 (Item 12 from file: 88)

04868448 SUPPLIER NUMBER: 21010553

Fabrication, micromagnetic and recording properties of CoCrPt on plastic disks.

Ramamurthy Acharya, B.; Abarra, E.N.; Phillips, G.N.; Suzuki, T.; Adachi, K.; Kitagaki, N.; Aihara, M.

IEEE Transactions on Magnetics, v34, n4, p1594(3)
July, 1998
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

AUTHOR ABSTRACT: **CoCrPt** media with 20 nm thickness are fabricated at low temperatures on plastic disks using Cr and Si(O.sub.2) underlayers and on **glass** substrates using a Cr underlayer. The fabrication condition is optimized for high coercivity of 2.2 kOe on plastic and 2.4 kOe on **glass** . The dependence of magnetic properties on Ar pressure and sputtering power of **CoCrPt** is discussed for the media on plastic disks in comparison with the **glass** case. The micromagnetic properties such as Barkhausen volume and (Delta)M are discussed. Recording properties...

41/3,K/1 (Item 1 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

05608858 Supplier Number: 48486762 (USE FORMAT 7 FOR FULLTEXT)
PMT Services Signs Definitive Agreement to Acquire MBN National, With Merchant Portfolio of 8,000 Accounts and Annualized Charge Volume of $400 Million.
Business Wire, p05181381
May 18, 1998
Language: English Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 634

... which is subject to customary closing conditions, is expected by the end of May 1998.
Mr . Roberts remarked, "The acquisition of **MBN** will mark another successful step in PMT's dual growth strategies, which are designed to...

...program to acquire veteran sales forces and entrepreneurial managerial talent along with merchant account portfolios. **MBN** represents the tenth acquisition of an operating business completed since then that accomplishes all three...

...have historically increased its sales organization's internal sales post transaction and we anticipate that **MBN** will follow suit.
" **MBN** and the other eight transactions already completed during the first 10 months of fiscal 1998...

...clear examples of the potential PMT has in the ongoing consolidation of the industry," concluded **Mr** . Roberts. "With the completion of the **MBN** acquisition, these transactions will have added over $4.4 billion in aggregate annualized charge volume....

41/3,K/2 (Item 2 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

02743565 Supplier Number: 43673421 (USE FORMAT 7 FOR FULLTEXT)
NIST develops new scanner for measuring magnetic domains
Electronic Chemicals News, v8, n4, pN/A
Feb 28, 1993
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 160

(USE FORMAT 7 FOR FULLTEXT)
TEXT:
...read head performance depends in part on controlling magnetic domain formation. Domians can cause irreversible **magnetoresistive** (**MR**) response and **Barkhausen noise** . The voltage probes have tip radii of about 0.1 micrometer and can be independently...

...within 0.05 micrometer under video-microscope observation. Applying two orthogonal magnetic field measures the **MR** response as a function of field magnitude and angle. These features provide a unique dynamic picture of the **MR** response of extremely small areas. The researchers found that magnetostatic interactions and non-transverse applied field components lead to the formation of domains and subsequent **Barkhausen noise** . Domain formation can be supressed by reducing the magnetostatic interactions with flux closure schemes or...

41/3,K/3 (Item 1 from file: 160)

DIALOG(R)File 160:Gale Group PROMT(R)

02397580
MK LEADS INTERNATIONAL CONSORTIUM TO BRING VERY HIGH SPEED RAIL TO TEXAS
News Release September 27, 1989 p. 1

William M. Agee, chairman and chief executive officer of Morrison Knudsen Corporation (**MBN** -NYSE), announced today the organization of a consortium to compete for the franchise to build a very high-speed rail system linking major Texas cities. **Mr** . Agee made the announcement at news conferences in Austin, Dallas and Houston. He was joined...

41/3,K/4 (Item 1 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

06724037 SUPPLIER NUMBER: 14538917 (USE FORMAT 7 OR 9 FOR FULL TEXT)
The incredible shrinking disk drive. (includes related article) (Thin Film Technology)
Bond, John
Solid State Technology, v36, n9, p39(4)
Sept, 1993
ISSN: 0038-111X LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT
WORD COUNT: 4153 LINE COUNT: 00325

... is required as it is in the MR head.)
There are other technical difficulties with **MR** heads. **Barkhausen noise** results from the motion of magnetic domain walls. To counteract this, **MR** sensors have a pinning or bias layer. This layer provides constant magnetization to prevent motion of domain boundaries in the **MR** layer. The pinning material that is generally used, however, is particularly subject to corrosion. As...

41/3,K/5 (Item 1 from file: 636)
DIALOG(R)File 636:Gale Group Newsletter DB(TM)

02029134 Supplier Number: 43679879 (USE FORMAT 7 FOR FULLTEXT)
MAGNETIC MATERIALS:New Scanner Accurately Measures Magnetic Domains
Electronic Materials Technology News, v7, n4, pN/A
March, 1993
Language: English Record Type: Fulltext
Document Type: Newsletter; Trade
Word Count: 166

(USE FORMAT 7 FOR FULLTEXT)
TEXT:
...head performance depends in part on controlling magnetic domain formation. Domains can cause irreversible magnetostrictive (**MR**) response and **Barkhausen noise** . NIST researchers have developed a scanning four-probe resistance measurement for studying and measuring the...

...within 0.05 micrometer under video- microscope observation. Applying two orthogonal magnetic fields measures the **MR** response as a function of field magnitude and angle. These features provide a unique dynamic picture of the **MR** response of extremely small areas. The researchers found that magnetostatic and non-transverse applied field components lead to the formation of domains and subsequent **Barkhausen noise** . Domain formation can be suppressed by reducing the magnetostatic interactions with flux closure schemes or...

41/3,K/6 (Item 1 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

05725058 SUPPLIER NUMBER: 72611405
Doubly Exchange-Biased FeMn/NiFe/Cu/NiFe/CrMnPt Spin Valves.
Lu, Zhengqi; Lai, Wuyan; Zheng, Yuankai
IEEE Transactions on Magnetics, 36, 5, 2899
Sept, 2000
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

...AUTHOR ABSTRACT: CrMnPt spin valves are prepared. By field annealing in magnetic fields of opposite directions, the **magnetoresistive** curve consists of two loops shifted in opposite directions from the zero magnetic field. Whether...

...modified spin valve can maximize the linear response region. It also shows potential for suppressing **Barkhausen noise** .
Index Terms--Doubly exchange biasing, spin valve.

41/3,K/7 (Item 2 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

05058162 SUPPLIER NUMBER: 54257474
Limitations to track following imposed by position error signal SNR using a multi-tapped magnetoresistive servo head. (Selected Papers from the Ninth Annual Magnetic Recording Conference on Magnetic Recording Heads (TMRC '98)) (signal-to-noise ratio)
Bain, James A.; Messner, William C.; Steele, John H., II; Schwarz, Theodore A.; O'Kane, William J.; Connolly, Maura P.
IEEE Transactions on Magnetics, 35, 2, 740(6)
March, 1999
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

AUTHOR ABSTRACT: A multi-tapped **magnetoresistive** (**MR**) stripe has been commercially fabricated as a tape head for evaluation as a potential tracking sensor for magnetic tape systems with dedicated servo. In this approach, two adjacent **MR** elements sharing a common bias current are each positioned halfway over a single 17 um wide servo track. The head leads provide signals from each of the **MR** elements which are separated 1.25 um by permanent magnets that provide **longitudinal bias** . Since this servo configuration uses a differential sensor with a simple square wave tracking pattern...

41/3,K/8 (Item 3 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

04868850 SUPPLIER NUMBER: 21010955
Spin valve heads with a corrosion resistant MnRh exchange layer. (manganese rhodium)
Veloso, Anabel; Freitas, Paulo P.; Oliveira, Nuno J.; Fernandes, Joao; Ferreira, Mario
IEEE Transactions on Magnetics, v34, n4, p2343(5)
July, 1998
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

...AUTHOR ABSTRACT: and height h = 1-2 ((micro)meter) were fabricated. The sensors show well-linearized magnetoresistance (**MR**) transfer curves, without hysteresis or **Barkhausen noise** and are thermally stable under consecutive 5 h anneals in vacuum up to 225 (degrees...

...micro)meter) output is measured. Index Terms - Corrosion resistance, exchange layers, magnetic recording/reading heads, **magnetoresistive** materials and devices, spin valve heads.

41/3,K/9 (Item 4 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

04868613 SUPPLIER NUMBER: 21010718
Multi-tapped magnetoresistive heads for magnetic tape tracking servo.
Steele, John H., II; Messner, William C.; Bain, James A.; Schwarz, Theodore A.; O'Kane, William J.; Connolly, Maura P.
IEEE Transactions on Magnetics, v34, n4, p1904(3)
July, 1998
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

AUTHOR ABSTRACT: A multi-tapped **magnetoresistive** (**MR**) stripe has been commercially fabricated as a tape head for evaluation as a potential tracking sensor for magnetic tape systems with dedicated servo. In this approach, two adjacent **MR** elements sharing a common bias current are each positioned halfway over a single 17,5 ((micro)meter) wide servo track. The head leads provide signals from each of the **MR** elements which are separated 1.25 ((micro)meter) by permanent magnets that provide **longitudinal bias** . Since this servo configuration uses a differential sensor with a simple square wave tracking pattern...

...of the multi-tapped elements are shown to be comparable to those from standard individual **MR** heads fabricated on the same wafer. Cross-track signal profiles show that two adjacent elements...
...this type of servo scheme. Keywords - Tape Recording, Tape Heads, Tracking Servos, Position Error Signal, **Magnetoresistive** Heads

41/3,K/10 (Item 5 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

04868501 SUPPLIER NUMBER: 21010606
Domain walls and magnetic properties of very thin permalloy films for magnetoresistive sensors.
Akhter, M.A.; Mapps, D.J.; Ma, Y.Q.; Petford-Long, A.K.; Doole, R.
IEEE Transactions on Magnetics, v34, n4, p1147(3)
July, 1998
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

...AUTHOR ABSTRACT: properties (coercivity and magnetoresistance) of very thin permalloy films were studied for their use in **magnetoresistive** (**MR**) sensors. Permalloy films were deposited under different conditions and a comparison was made in their properties. Domain walls in these films were studied using a specially modified TEM. **Barkhausen noise** was studied by differentiating the M-H characteristic and its origin is discussed in the context of the magnetic domain wall structures. Index Terms - **Barkhausen noise** , Domain wall, **Magnetoresistive** sensors, Permalloy thin films.

41/3,K/11 (Item 6 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

04868418 SUPPLIER NUMBER: 21010523
A self-biased spin valve sensor with a longitudinally pinned layer.
Suzuki, Tetsuhiro; Matsutera, Hisao
IEEE Transactions on Magnetics, v34, n4, p1501(3)
July, 1998

ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

...AUTHOR ABSTRACT: to a longitudinally and moderately pinned layer. Such spin-valve sensors are more appropriate for **GMR** /Inductive head processes than conventional spin-valve sensors because the direction of pinning is parallel...

...of its sides. The transfer curve of this spin valve sensor exhibits excellent linearity without **Barkhausen noise** . Dynamic range is great in proportion to the sense current, while sensitivity is slightly less...

41/3,K/12 (Item 7 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

04868417 SUPPLIER NUMBER: 21010521
Fabrication and characterization of contiguous permanent magnet junctions.
Xiao, Min; Devasahayam, Adrian J.; Kryder, Mark H.
IEEE Transactions on Magnetics, v34, n4, p1495(3)
July, 1998
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

AUTHOR ABSTRACT: This paper addresses several important issues concerning contiguous permanent magnet biased **magnetoresistive** sensors. A fabrication process utilizing isotropically etched silicon nitride for lift-off is described, and...

...a component of the resistance inversely propotional to the sensor height is identified. The effective **longitudinal bias** field is found to decrease with increasing trackwidth. Index Terms - contiguous permanent magnet junctions, domain stabilization, lift-off, **longitudinal bias** .

41/3,K/13 (Item 8 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

04868403 SUPPLIER NUMBER: 21010507
Magnetic domain instability in MR heads due to overlaid structure of permanent magnet film.
Mitsumata, Chiharu; Kikuchi, Keiko; Kobayashi, Toshio
IEEE Transactions on Magnetics, v34, n4, p1453(3)
July, 1998
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

AUTHOR ABSTRACT: The permanent magnet (PM) film easily forms the overlap structure on the **magnetoresistive** (**MR**) film due to the overspray of sputtered material in the deposition process. This overlap structure of a PM film affects the stability of the magnetic domain structure in an **MR** element. The calculation model in this study takes account of the overlaid structure of a...

...A large hysteresis was observed in the transfer curve due to a counter bias against **longitudinal bias** field in the case of 0.3 to 0.5 ((micro)meter) overlaid PM width...

...profile showed the double peak profile which was caused by the multidomain state in the **MR** element. However, in the case of 0 to 0.2 ((micro)meter) overlaid PM width...

...controlled below 0.1 ((micro)meter) in order to achieve the readback stability of the **MR** element.

41/3,K/14 (Item 9 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

04781645 SUPPLIER NUMBER: 20757880
In-plane vector magnetometer employing a single unbiased magnetoresistor. (The 8th Annual Magnetic Recording Conference (TMRC) on Magnetic Recording Systems)
Kaplan, Ben-Zion; Paperno, Eugene; Flynn, David I.
IEEE Transactions on Magnetics, v34, n1, p253(6)
Jan, 1998
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

AUTHOR ABSTRACT: This paper extends previous work, where a single barber-pole magnetoresistor (**MR**) was employed for measuring simultaneously two magnetic field components. The present work differs from the previous one in employing a single unbiased **MR** , which is simpler and less expensive. The present arrangement, like the previous one, relies on ...

...of an external magnetic field is detected by measuring the time shifts of the resulting **MR** ac output zero-crossings. Despite the similarity between the present system and its previous counterpart...

...other as they were in the previous barber-pole case. Index Terms - Barber-pole magnetoresistor, **Barkhausen noise** , elliptically rotating bias, magnetoresistance, unbiased magnetoresistor, Stoner-Wohlfarth theory, thin-ferromagnetic films.

41/3,K/15 (Item 10 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

04646470 SUPPLIER NUMBER: 20247676
Fabrication and characterization of giant magnetoresistive elements with an integrated test coil.
Kools, Jacques C.S.; Ruigrok, Jaap J.M.; Postma, Bert; De Nooijer, M. Christine; Folkerts, Wiep
IEEE Transactions on Magnetics, v33, n6, p4513(9)
Nov, 1997
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

AUTHOR ABSTRACT: **Magnetoresistive** elements (MRE's) containing exchange-biased spin valve multilayers as the **magnetoresistive** material have been fabricated. Their electrical response has been measured using an integrated test coil...

...higher than those obtained in similar elements based on a conventional, 30 nm thick anisotropic **magnetoresistive** (AMR) (Ni.sub.80)(Fe.sub.20) film linearized by the "barber-pole" method. The...

...result in a switching behavior which is characteristic of domain wall movement and contains hysteresis, **Barkhausen noise** , and strong harmonic distortion. The arrangement with crossed anisotropies is found to display a behavior characteristic of switching by magnetization rotation as evidenced by a strong reduction of hysteresis, **Barkhausen noise** , and harmonic distortion. Demagnetization effects are calculated in order to quantitatively explain the shape of...

...difference in output voltage when compared to AMR-based MRE's. Index Terms - Barkhausen effect, **magnetoresistive** devices, spin valve, technology, transmission line model.

41/3,K/16 (Item 11 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

04222875 SUPPLIER NUMBER: 19264658
Submicron trackwidth and stripe height MR sensor test structures. (magnetoresistive) (The 1996 IEEE International Magnetics Conference) (INTERMAG '96)
Fontana, Robert E., Jr.; MacDonald, Scott A.; Tsang, Ching; Lin, Tsann
IEEE Transactions on Magnetics, v32, n5, p3440(3)
Sep, 1996
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

AUTHOR ABSTRACT: Magnetic recording areal densities greater than 5 Gbit/(in.sup.2) will require **magnetoresistive** (**MR**) sensors with critical dimensions below 1.0 ((micro)meter). The **longitudinal bias** scheme used for this sensor size must provide stable device operation and must be compatible...

...material abutted to the sensor magnetic films and with lead material self aligned to the **longitudinal bias** material can satisfy these requirements. This is demonstrated by the fabrication and testing of submicron unshielded **MR** structures with stable transfer curves.

41/3,K/17 (Item 12 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

04222854 SUPPLIER NUMBER: 19264637
Spin-valve read heads with NiFe/Co90Fe10 layers for 5 Gbit/square inch density recording. (The 1996 IEEE International Magnetics Conference) (INTERMAG '96)
Kanai, H.; Yamada, K.; Aoshima, K.; Ohtsuka, Y.; Kane, J.; Kanamine, M.; Toda, J.; Mizoshita, Y.
IEEE Transactions on Magnetics, v32, n5, p3368(6)
Sep, 1996
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Abstract

...AUTHOR ABSTRACT: NiFe/Co90Fe10 bilayer as a soft magnetic free layer in spin-valve films with a **GMR** enhanced structure comprised of NiFe/Co90Fe10/Cu/Co90Fe10/FeMn is outlined. The **GMR** ratio of the spin-valve film with Co90Fe10 is over 7% and the coercivity of...

...Angstrom))/Co90Fe10(22 (Angstrom))/FeMn(100 (Angstrom))/Ta(100 (Angstrom)) structure and 260 (Angstrom) thick **domain control** Co78Cr10Pt12 magnet layers. Its read/write performance was tested on a low noise CoCr17Pt5Ta4 thin film disk with an **Mr** (center dot)t of 0.41 memu/(cm.sup.2) and a coercivity of 2500 Oe. There is no **Barkhausen noise** in the readback waveform. The result of the microtrack sensitivity profiles reveals an effective read...

...and at a linear density of 217 kBPI on a thin film disk with an **Mr** (center dot)t of 0.72 memu/(cm.sup.2). Thus, 5 Gbit/(in.sup...

41/3,K/18 (Item 13 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

03313061 SUPPLIER NUMBER: 16119468
1/f Noise in giant magnetoresistive materials.
Hardner, H.T.; Parkin, S.S.P.; Weissman, M.B.; Salamon, M.B.; Kita, E.
Journal of Applied Physics, v75, n10, p6531(3)
May 15, 1994

ISSN: 0021-8979 LANGUAGE: English RECORD TYPE: Abstract

ABSTRACT: Materials which have giant magnetoresistance (**GMR**) generate 1/f resistance noise. **GMR** is the primary source of the noise. Noise fluctuations in parallel and antiparallel alignments occur when dR/dH is large. The **GMR** transition sweeps the field when **Barkhausen noise** occurs in the resistance of the materials.

41/3,K/19 (Item 14 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

03128323 SUPPLIER NUMBER: 15154058
Identification of the place causing Barkhausen noise **in yoke type** MR **heads. (magnetoresistive) (The 1993 IEEE International Magnetics Conference, Folkets Hus City Conference Center, Stockholm, Sweden, April 13-16, 1993) (Part II: Magnetic Recording Heads)**
Nakai, K.; Kira, T.; Minakata, R.; Okamoto, N.; Komoda, T.
IEEE Transactions on Magnetics, v29, n6, p3829(3)
Nov, 1993
ISSN: 0018-9464 LANGUAGE: English RECORD TYPE: Citation

Identification of the place causing Barkhausen noise **in yoke type** MR **heads. (magnetoresistive) (The 1993 IEEE International Magnetics Conference, Folkets Hus City Conference Center, Stockholm, Sweden, April 13...**

41/3,K/20 (Item 15 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

03063537 SUPPLIER NUMBER: 14831643
Simulation of magnetization distribution in magnetoresistive **film under a** longitudinal bias **field.**
Chiaki Ishikawa; Kaori Suzuki; Naoki Koyama; Kazuetsu Yoshida; Yutaka Sugita; Kiminari Shinagawa; Yoshinobu Nakatani; Nobuo Hayashi
Journal of Applied Physics, v74, n9, p5666(6)
Nov 1, 1993
ISSN: 0021-8979 LANGUAGE: English RECORD TYPE: Abstract

Simulation of magnetization distribution in magnetoresistive **film under a** longitudinal bias **field.**

ABSTRACT: Micromagnetic calculations are obtained for the distribution of magnetization in magnetoresistive (MR) films subjected to **longitudinal bias** . The micromagnetic calculations also include the measurement of spatial sensitivity along the track width in the **MR** films. The distribution is found to be transversely biased and is not in symmetry with ...

...reflection about the track width plane. The heterogeneous demagnetization field produces this asymmetry in the **MR** films.

41/3,K/21 (Item 1 from file: 98)
DIALOG(R)File 98:General Sci Abs/Full-Text

04508510 H.W. WILSON RECORD NUMBER: BGSA01008510
Structural biochemistry and interaction architecture of the DNA double-strand break repair Mre11 nuclease and Rad50-ATPase.
Hopfner, Karl-Peter
Karcher, Annette; Craig, Lisa

Cell (Cell) v. 105 no4 (May 18 2001) p. 473-85
SPECIAL FEATURES: bibl il ISSN: 0092-8674
LANGUAGE: English
COUNTRY OF PUBLICATION: United States

ABSTRACT: To clarify functions of the Mre11/Rad50 (**MR**) complex in DNA double-strand break repair, we report Pyrococcus furiosus Mre11 crystal structures, revealing a protein phosphatase-like, dimanganese binding domain capped by a unique **domain controlling** active site access. These structures unify Mre11's multiple nuclease activities in a single endo...

...Electron microscopy, small angle X-ray scattering, and ultracentrifugation data of human and P. furiosus **MR** reveal a dual functional complex consisting of a (Mre11)2/(Rad50)2 heterotetrameric DNA processing...

41/3,K/22 (Item 1 from file: 20)
DIALOG(R)File 20:Dialog Global Reporter

14585202 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Eurologic Systems Brings Leading-Edge Storage Technology To Markets In Japan; Expands Presence In Japan
BUSINESS WIRE
January 10, 2001
JOURNAL CODE: WBWE LANGUAGE: English RECORD TYPE: FULLTEXT
WORD COUNT: 678

(USE FORMAT 7 OR 9 FOR FULLTEXT)

... CONTACT: Eurologic Systems Kay Brewer, 978-266-9224 kbrewer@eurologic.com or Japan Technology Inc. **Mr** . Takaaki Serizawa, 81 3 5951-4302 jtiseri@al. **mbn** .or.jp
08:05 EST JANUARY 10, 2001

41/3,K/23 (Item 2 from file: 20)
DIALOG(R)File 20:Dialog Global Reporter

12967361 (USE FORMAT 7 OR 9 FOR FULLTEXT)
New threat to dotcom world
STATESMAN (INDIA)
September 23, 2000
JOURNAL CODE: FSTN LANGUAGE: English RECORD TYPE: FULLTEXT
WORD COUNT: 399

(USE FORMAT 7 OR 9 FOR FULLTEXT)

... the client who has no say in the use of his own domain name, says **Mr** Bhavin Turakhia, a Net expert who has a web-hosting service. Another problem of the...

41/3,K/24 (Item 3 from file: 20)
DIALOG(R)File 20:Dialog Global Reporter

09540134 (USE FORMAT 7 OR 9 FOR FULLTEXT)
France US Press Reports on Failure To Help Kosovo Police
WORLD NEWS CONNECTION
February 10, 2000
JOURNAL CODE: WWNC LANGUAGE: English RECORD TYPE: FULLTEXT
WORD COUNT: 183

(USE FORMAT 7 OR 9 FOR FULLTEXT)

This zone, where the **MBN** is deployed, is "certainly the most difficult zone" in the Serbian province, which has an ethnic Albanian majority, but, **Mr** . Bureau said, "there is no bias" by the **MBN** in favor of one community or another.

BBCCMM THIS REPORT MAY CONTAIN COPYRIGHTED MATERIAL. COPYING...

41/3,K/25 (Item 4 from file: 20)
DIALOG(R)File 20:Dialog Global Reporter
(c) 2003 The Dialog Corp. All rts. reserv.

09284874 (USE FORMAT 7 OR 9 FOR FULLTEXT)
OPERATING SYSTEMS: A preview of Windows 2000
BANGKOK POST, p4
January 26, 2000
JOURNAL CODE: FBKP LANGUAGE: English RECORD TYPE: FULLTEXT
WORD COUNT: 1375

(USE FORMAT 7 OR 9 FOR FULLTEXT)

... recommendation being based on the results of comprehensive testing using a notebook connected to a **domain controller** and while disconnected. He also says that the main reasons why mobile users will want ...

... you log on again, and you lose your custom desktop, menu and applications settings, observes **Mr** . Valliere, adding that Windows 95/98 users may not be aware of this problem. When...

41/3,K/26 (Item 5 from file: 20)
DIALOG(R)File 20:Dialog Global Reporter
(c) 2003 The Dialog Corp. All rts. reserv.

08984943 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Dr. Hua-Ching Tong Named Read-Rite Fellow
PR NEWSWIRE
January 05, 2000
JOURNAL CODE: WPRW LANGUAGE: English RECORD TYPE: FULLTEXT
WORD COUNT: 574

(USE FORMAT 7 OR 9 FOR FULLTEXT)

... heads for volume production, and was task force leader of the team that solved the **Barkhausen Noise** problem. He has been recognized many times for technical excellence and mentorship by his peers...

41/3,K/27 (Item 6 from file: 20)
DIALOG(R)File 20:Dialog Global Reporter
(c) 2003 The Dialog Corp. All rts. reserv.

04743272 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Sun cascades PCs into its networks
SECTION TITLE: Features
Stephen Ballantyne
NATIONAL BUSINESS REVIEW
March 18, 1999
JOURNAL CODE: WNBR LANGUAGE: English RECORD TYPE: FULLTEXT
WORD COUNT: 872

(USE FORMAT 7 OR 9 FOR FULLTEXT)

... controller using the same user manager for domains tool that an NT administrator would use," Mr Sands said.

Cascade also gives users of all types of Windows software a familiar look...

File 344:Chinese Patents Abs Aug 1985-2003/Mar
(c) 2003 European Patent Office
File 347:JAPIO Oct 1976-2003/Mar(Updated 030703)
(c) 2003 JPO & JAPIO
File 350:Derwent WPIX 1963-2003/UD,UM &UP=200347
(c) 2003 Thomson Derwent

Set	Items	Description
S1	16459	MAGNETORESISTIV? OR MR OR GMR
S2	3048229	SENSOR? OR HEAD? OR ELEMENT? OR MRAM OR MAGNETIC?()RAM
S3	3836515	FILM? OR THINFILM? OR LAYER? OR OVERLAY? OR OVERLAID? OR L-AMIN? OR LAMEL? OR MULTILAYER? OR SHEET OR LEAF? OR FOIL? OR -COAT? OR TOPCOAT?
S4	1181912	OVERCOAT? OR VENEER? OR SHEATH? OR COVER? OR ENVELOP? OR E-NCAS? OR ENWRAP? OR OVERSPREAD? OR UNDERLAY? OR UNDERLAID?
S5	1387	BARKHAUSEN(2N)NOISE OR MBN OR DOMAIN()CONTROL? OR LONGITUD-INAL?()BIAS
S6	88	10()M()CM OR MILLI()OHM()CENTIMETER? OR M()OHM()CM
S7	637143	SIO2 OR SI02 OR GLASS OR SILICON()DIOXIDE
S8	73	COCRPT
S9	7833	S1(3N)S2
S10	4592727	S3 OR S4
S11	434	S9 AND S10 AND S5
S12	1	S11 AND S6 AND S7
S13	12	S11 AND (S6 OR S7)
S14	11	S13 NOT S12
S15	482	S10(5N)S5
S16	222	S9 AND S15
S17	1	S16 AND S6 AND S7
S18	0	S17 NOT S12
S19	0	S16 AND S7 AND S8
S20	6	S16 AND (S7 OR S8)
S21	0	S20 NOT (S17 OR S14)
S22	0	S5 AND S7 AND S8
S23	1	S16 AND S6
S24	0	S23 NOT (S17 OR S14)

12/5/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014446462 **Image available**
WPI Acc No: 2002-267165/200231
XRAM Acc No: C02-079441
XRPX Acc No: N02-207697
Magnetoresistive sensor **for use in magnetic head for reading back magnetically recorded information, includes magnetic** domain control layers **for controlling** Barkhausen noise **of** magnetoresistive sensor layer
Patent Assignee: HITACHI LTD (HITA); ARAI R (ARAI-I); SOEYA S (SOEY-I); TAKAHASHI H (TAKA-I)
Inventor: ARAI R; SOEYA S; TAKAHASHI H
Number of Countries: 002 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20020003685	A1	20020110	US 2001811606	A	20010320	200231	B
JP 2002026426	A	20020125	JP 2000210704	A	20000706	200231	

Priority Applications (No Type Date): JP 2000210704 A 20000706
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020003685	A1		20	G11B-005/39	
JP 2002026426	A		13	H01L-043/08	

Abstract (Basic): US 20020003685 A1
NOVELTY - **Magnetoresistive sensor** includes magnetic **domain control layers** (106) for controlling **Barkhausen noise** of a **magnetoresistive sensor layer** (105). The magnetic **domain control layers** are disposed on and in contact with opposite ends of the **magnetoresistive sensor layer** in a region from the end surface of a media-opposed surface side of the **magnetoresistive sensor layer** to the depth position.
DETAILED DESCRIPTION - A **magnetoresistive sensor** includes a substrate (101); a lower and an upper magnetic shield **layer** (103,109); a **magnetoresistive sensor layer** between the lower and upper magnetic shields; an electrode terminal for flowing a signal current perpendicular to the **magnetoresistive sensor layer** ; and magnetic **domain control layers** for controlling **Barkhausen noise** of the **magnetoresistive sensor layer** . The magnetic **domain control layers** are made of a material having a specific resistance not less than 10 **m** . **ohm** . **cm** . They are disposed on and in contact with opposite ends of the **magnetoresistive sensor layer** in a region from the end surface of a media-opposed surface side of the **magnetoresistive sensor layer** to the depth position (110).
INDEPENDENT CLAIMS are included for:
(I) a combined magnetic head mounting (a) a write element and (b) a read **element** comprising the above **magnetoresistive sensor** ; and
(II) a magnetic disk apparatus, comprising (i) a magnetic recording media, (ii) a magnetic read/write **head** comprising the above **magnetoresistive sensor** , (iii) a read/write circuit, (iv) an actuator, and (v) mechanism for controlling the read/write operation.
USE - The sensor is used for magnetic head for reading back magnetically recorded information. The magnetic head is used in magnetic disk apparatus (all claimed).
ADVANTAGE - The **magnetoresistive sensor** has excellent reproducing resolution in magnetic read and write.
DESCRIPTION OF DRAWING(S) - The drawing shows a diagram showing the sectional structure of the media-opposed surface side of the inventive **magnetoresistive sensor** and the position of a magnetic **domain control layer** .
substrate (101)

lower magnetic shield **layer** (103)
magnetoresistive sensor layer (105)
magnetic **domain control layers** (106)
upper magnetic shield **layer** (109)
depth position (110)
pp; 20 DwgNo 1/22

Title Terms: MAGNETORESISTIVE; SENSE; MAGNETIC; HEAD; READ; BACK; MAGNETIC; RECORD; INFORMATION; MAGNETIC; DOMAIN; CONTROL; **LAYER** ; CONTROL; BARKHAUSEN; NOISE; MAGNETORESISTIVE; SENSE; **LAYER**
Derwent Class: L03; T03
International Patent Class (Main): G11B-005/39; H01L-043/08
International Patent Class (Additional): G01R-033/09
File Segment: CPI; EPI

14/5/1 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO

06690883 **Image available**
MAGNETIC HEAD

PUB. NO.: 2000-276713 [JP 2000276713 A]
PUBLISHED: October 06, 2000 (20001006)
INVENTOR(s): HOSHINO KATSUMI
FUYAMA MORIAKI
APPLICANT(s): HITACHI LTD
APPL. NO.: 11-079178 [JP 9979178]
FILED: March 24, 1999 (19990324)
INTL CLASS: G11B-005/39

ABSTRACT
PROBLEM TO BE SOLVED: To make it possible to avoid a rapid degradation in breakdown voltage by making a lower gap insulating **film** or upper gap insulating **film** hand a **multilayered** structure composed of **SiO2** **layers** and **layers** consisting of **film** mixtures composed of Al2O3 or Al2O3 and ≥1 kind selected from among Al2O3, **SiO2** , TiO2, Ta2O5, HfO2, ZrO2 and Nb2O5.

SOLUTION: The **magnetoresistive** **head** is composed by disposing a **magnetoresistive** **element** consisting of a magneto-resistive **film** 14, a magnetic **domain** **control** **film** 15 and an electrode 16 between an upper shield and a lower shield via the upper gap insulating **film** 17 and the lower gap insulating **film** 13. The lower gap insulating **film** 17 or the upper gap insulating **film** 13 is formed of the **multilayered** structure composed of the **SiO2** **layer** and the **film** mixture composed of the Al2O3 or the Al2O3 and ≥1 kind selected from among **SiO2** , TiO2, Ta2O5, HfO2, ZrO2 and Nb2O5.

14/5/2 (Item 2 from file: 347)
DIALOG(R)File 347:JAPIO

05331926 **Image available**
MAGNETO-RESISTIVE HEAD

PUB. NO.: 08-287426 [JP 8287426 A]
PUBLISHED: November 01, 1996 (19961101)
INVENTOR(s): ARAI REIKO
WATANABE KATSURO
FUYAMA MORIAKI
APPLICANT(s): HITACHI LTD [000510] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 07-089022 [JP 9589022]
FILED: April 14, 1995 (19950414)
INTL CLASS: [6] G11B-005/39; C23C-014/08; G01R-033/09; H01L-043/08
JAPIO CLASS: 42.5 (ELECTRONICS -- Equipment); 12.6 (METALS -- Surface Treatment); 42.2 (ELECTRONICS -- Solid State Components); 46.1 (INSTRUMENTATION -- Measurement)
JAPIO KEYWORD: R020 (VACUUM TECHNIQUES); R044 (CHEMISTRY -- Photosensitive Resins)

ABSTRACT
PURPOSE: To obtain a high-reliability head which is stabilized in the magnetic domain structure of a free side magnetic **layer** and has high output by providing both ends of the free side magnetic **layer** with

magnetic **domain control layers** of two- **layered** structures composed of ferromagnetic **layer** consisting of the same material as the material of the free side magnetic **layer** .

CONSTITUTION: This giant magneto-resistive **GMR head** is formed of the free side magnetic **layer** 1, nonmagnetic **layer** 2, stationary side magnetic **layer** 3 and antiferromagnetic **layer** 4 on a **glass** or ceramic substrate 9. These three **layers** 2, 3, 4 are patterned to prescribed shapes and thereafter the two- **layered films** composed of the ferromagnetic **layer** 5 and antiferromagnetic **layer** 6 which are the magnetic **domain control layers** 7 of the two- **layered** structure are formed at both ends of the free side magnetic **layer** 1. Electrodes 8 are formed thereon. The intra-surface magnetization of the free side magnetic **layer** 1 and the stationary side magnetic **layer** 3 are directed into directions inclining 90 deg. with each other in the state that an external magnetic field is not impressed. The stationary side magnetic **layer** 3 is fixed in the magnetization in the preferable direction by the antiferromagnetic **layer** 4. The magnetization of the free side magnetic **layer** 1 is rotated freely by the magnetic field from the medium, by which a change in resistance is induced and the output is generated.

14/5/3 (Item 3 from file: 347)
DIALOG(R)File 347:JAPIO

04610902 **Image available**
MAGNETIC RECORDER-REPRODUCER

PUB. NO.: 06-282802 [JP 6282802 A]
PUBLISHED: October 07, 1994 (19941007)
INVENTOR(s): FUJII KOJI
APPLICANT(s): CITIZEN WATCH CO LTD [000196] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 05-090595 [JP 9390595]
FILED: March 26, 1993 (19930326)
INTL CLASS: [5] G11B-005/02
JAPIO CLASS: 42.5 (ELECTRONICS -- Equipment)
JOURNAL: Section: , Section No. FFFFFF, Vol. 94, No. 10, Pg. FFFFFF, FF, FFFF (FFFFFFFF)

ABSTRACT

PURPOSE: To suppress waveform distortion and **Barkhausen noise** by a method wherein a bias in the lateral or longitudinal direction is impressed on a magnetoresistance effect type head from a lower magnetic **layer** of a magnetic recording medium.
CONSTITUTION: A magnetic disk as a magnetic recording medium has a construction of a magnetic double **layer** formed of a **laminate** of a lower magnetic **layer** 21, an upper magnetic **layer** 22 and a magnetic isolating **layer** 20 inserted between these two magnetic **layers** . The lower magnetic **layer** 21 is prepared by forming a hard **film** of CoPt on a **glass** base 23 so that the axis of easy magnetization is directed in the vertical direction. The upper magnetic **layer** 22 is constituted of Co-Cr-Ta and has this axis in an in-plane direction. The isolating **layer** 20 is constituted of Cr and interrupts magnetic coupling of the upper magnetic **layer** 22 and the lower magnetic **layer** 21. The lower magnetic **layer** 21 is magnetized beforehand in the upward or downward direction in respect to the thickness and a lateral bias is impressed on an **MR head** by a leakage flux generated from this **layer** .

14/5/4 (Item 4 from file: 347)
DIALOG(R)File 347:JAPIO

03890805 **Image available**
MANUFACTURE OF MAGNETO RESISTANCE EFFECT HEAD

PUB. NO.: 04-255905 [JP 4255905 A]
PUBLISHED: September 10, 1992 (19920910)
INVENTOR(s): MOTOMURA YOSHIHIRO
APPLICANT(s): NEC CORP [000423] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 03-060789 [JP 9160789]
FILED: February 07, 1991 (19910207)
INTL CLASS: [5] G11B-005/39
JAPIO CLASS: 42.5 (ELECTRONICS -- Equipment)
JAPIO KEYWORD:R044 (CHEMISTRY -- Photosensitive Resins)
JOURNAL: Section: P, Section No. 1474, Vol. 17, No. 36, Pg. 141, January 22, 1993 (19930122)

ABSTRACT

PURPOSE: To easily produce a ferromagnetic magneto-resistance effect(**MR**) **head** without **Barkhausen noise** by implanting ion, and so on, to an anti- ferromagnetic **layer** or ferromagnetic **layer** .

CONSTITUTION: The MR **layer** 2 is formed in the manner of **film** -forming by a sputtering method, etc., with a mild magnetic material having strong magneto- resistance effect, on an insulated substrate 1 of **glass** , ferrite, etc. Next, a bias magnetic **layer** 3 is formed on the **layer** 2 by a vapor deposition with the use of anti-ferromagnetic body or ferromagnetic body, and a non-magnetic ion such as Ar, etc., is implanted to the **layer** 3, then by providing an electrode 5 at both sides of this non-magnetic part 4, the **MR head** without **Barkhausen noise** is easily produced. Meanwhile, the same result is obtained also by a heat treatment in place of ion implantation.

14/5/5 (Item 5 from file: 347)

02567477 **Image available**
FERROMAGNETIC MAGNETORESISTANCE ELEMENT

PUB. NO.: 63-184377 [JP 63184377 A]
PUBLISHED: July 29, 1988 (19880729)
INVENTOR(s): AO KENICHI
YOSHINO YOSHI
APPLICANT(s): NIPPON DENSO CO LTD [000426] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 62-016347 [JP 8716347]
FILED: January 27, 1987 (19870127)
INTL CLASS: [4] H01L-043/08
JAPIO CLASS: 42.2 (ELECTRONICS -- Solid State Components)
JOURNAL: Section: E, Section No. 689, Vol. 12, No. 461, Pg. 40, December 05, 1988 (19881205)

ABSTRACT

PURPOSE: To suppress **Barkhausen noise** and unisotropic dispersion and eliminate the discontinuous variation of a detection resistance value and the distortion of a detection output and obtain an **MR element** with uniform **element** characteristics by providing an insulating substrate whose surface roughness is less than a specific value, a ferromagnetic metal thin **film layer** formed on the surface of the insulating substrate and respective electrodes which are so formed as to be connected to both the ends of the metal thin **film layer** .

CONSTITUTION: An **MR element** is composed of an insulating substrate 1 which is made of **glass** or the like and has a surface roughness of less than 100 angstroms , electrodes 3a and 3b which are formed on the

insulating substrate 1 and made of electrode material such as aluminum and a ferromagnetic metal thin **film** (hereinafter referred to as MR **layer**) 2 which is formed to have a thickness of 300-1500 angstroms by depositing alloy such as nickel-iron or nickel-cobalt. If the surface roughness of the substrate is small in comparison with the thickness of the MR **layer** 2, the anisotropic dispersion of the MR **layer** 2 is reduced and **Barkhausen noise** is suppressed. Thus, if the insulating substrate 1 whose surface roughness is less than 100 angstroms is employed, the discontinuous variation, distortion and the like of the resistance value of the **MR element** can be eliminated.

14/5/6 (Item 6 from file: 347)
DIALOG(R)File 347:JAPIO

02039518 **Image available**
THIN **FILM** MAGNETIC HEAD

PUB. NO.: 61-253618 [JP 61253618 A]
PUBLISHED: November 11, 1986 (19861111)
INVENTOR(s): YAMAMOTO TORU
NAGATA YUJI
APPLICANT(s): MATSUSHITA ELECTRIC IND CO LTD [000582] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 60-094701 [JP 8594701]
FILED: May 02, 1985 (19850502)
INTL CLASS: [4] G11B-005/39
JAPIO CLASS: 42.5 (ELECTRONICS -- Equipment)
JAPIO KEYWORD:R004 (PLASMA); R135 (METALS -- Amorphous Metals)
JOURNAL: Section: P, Section No. 562, Vol. 11, No. 103, Pg. 146, April 02, 1987 (19870402)

ABSTRACT

PURPOSE: To eliminate a **Barkhausen noise** generated by a magnetic wall movement by constituting the titled magnetic head so that a part pinched by a sense current use lead wire of a magneto-resistance element for constituting a reproducing head utilizing a magneto-resistance effect of a ferromagnetic thin **film** has a single magnetic domain structure in a state that a leakage magnetic field from a recording medium has been applied.

CONSTITUTION: As for a pattern shape of an **MR element** vapor-depositing a permalloy wall to a thickness of 0.03.mu.m by applying a magnetic field in the longitudinal direction, its length L and width W are 72.mu.m, and 9.mu.m, respectively, and two kinds of patterns whose distances between insides of a lead wire 6 for a sense current flowing to an **MR element** 5 which has been formed by Au/Cr are 42.mu.m and 50.mu.m are used. The formed thin **film** magnetic head is brought to fixed magnetic field annealing in a vacuum in the longitudinal direction of the **MR element** , and subsequently, it is cooled slowly to a room temperature in a rotating magnetic field. After the annealing, a protective **glass** is stuck by a resin and a lapping head of a cylindrical tip is manufactured. As for the head which is manufactured in this way, the **MR element** becomes a single magnetic domain structure between lead values, therefore, a **Barkhausen noise** caused by a magnetic wall movement is not generated.

14/5/7 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

010312751 **Image available**
WPI Acc No: 1995-214009/199528
XRPX Acc No: N95-167774
Magnetoresistive sensor **having improved micro-track profile for**

servo-positioning - has grating profile under soft film **biassed** MR sensor layer **and hard bias stabilising magnets, with pattern being replicated for servo sensors through alumina or** silicon dioxide

Patent Assignee: IBM CORP (IBMC); INT BUSINESS MACHINES CORP (IBMC)
Inventor: ABOAF J A; DENISCN E V; KAHWATY V N; DENISON E V

Number of Countries: 003 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
TW 243530	A	19950321	TW 93110446	A	19931209	199528	B
US 5530608	A	19960625	US 92999510	A	19921230	199631	
			US 94286603	A	19940805		
			US 95447395	A	19950523		
CN 1091219	A	19940824	CN 93121529	A	19931229	199715	
US 5713122	A	19980203	US 92999510	A	19921230	199812	
			US 94286603	A	19940805		
			US 95449382	A	19950523		
US 5745978	A	19980505	US 92999510	A	19921230	199825	
			US 94286603	A	19940805		
			US 95447395	A	19950523		
			US 95449382	A	19950523		
			US 97799716	A	19970212		

Priority Applications (No Type Date): US 92999510 A 19921230; US 94286603 A 19940805; US 95447395 A 19950523; US 95449382 A 19950523; US 97799716 A 19970212
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
TW 243530	A		10	G11B-005/127	
US 5530608	A		15	G11B-005/33	Cont of application US 92999510 Cont of application US 94286603
US 5713122	A		15	G11B-005/127	Cont of application US 92999510 Div ex application US 94286603
US 5745978	A		15	G11B-005/127	Cont of application US 92999510 Cont of application US 94286603 Div ex application US 95447395 Div ex application US 95449382 Div ex patent US 5530608
CN 1091219	A			G11B-005/31	

Abstract (Basic): TW 243530 A

The **MR sensor** has a grating profile under both the soft **film** biassed MR **layer** and hard bias stabilising magnets. The grating pattern is replicated for the servo sensors through a thick **layer** of alumina or **silicon dioxide** . An outer read shield is removed from the servo elements using a stripping process that eliminates structural damage arising from alumina pin-holes.

Both element types are free of significant **Barkhausen noise** and instability because of grating stabilised domains in both the active MR regions and the passive hard biassing regions of each sensor. Each servo sensor is located at a greater distance from the single shield to optimise the micro-track profile. The resulting reduction in servo sensor frequency response leaves sufficient bandwidth for precise servo positioning.

ADVANTAGE - Has stable, linear data sensing elements for high density tape head. Stability and uniformity of both data and servo sensors is improved.

Dwg.6/12

Title Terms: MAGNETORESISTIVE; SENSE; IMPROVE; MICRO; TRACK; PROFILE; SERVO ; POSITION; GRATING; PROFILE; SOFT; **FILM** ; BIAS; SENSE; **LAYER** ; HARD; BIAS; STABILISED; MAGNET; PATTERN; REPLICA; SERVO; SENSE; THROUGH; ALUMINA; SILICON; DI; OXIDE
Derwent Class: T03; U12; V02
International Patent Class (Main): G11B-005/127; G11B-005/31; G11B-005/33
International Patent Class (Additional): G11B-005/58; G11B-025/06
File Segment: EPI

14/5/8 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

009226248 **Image available**
WPI Acc No: 1992-353670/199243
XRAM Acc No: C92-157013
XRPX Acc No: N92-269448
Magnetic-resistance effect type head prodn. - involves forming ferromagnetic and ferrodiamagnetic layers **and injecting ions into ferrodiamagnetic** layer
Patent Assignee: NEC CORP (NIDE)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
JP 4255905	A	19920910	JP 9160789	A	19910207	199243	B

Priority Applications (No Type Date): JP 9160789 A 19910207
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 4255905	A		5	G11B-005/39	

Abstract (Basic): JP 4255905 A
In the prepn. head has (a) a ferromagnetic magneto-resistance effect **layer** and (b) a ferro-diamagnetic **layer** or a ferri-magnetic **layer** formed in direct contact with (a) to generate a bias magnetic field longitudinally by exchange force with (a). The method involves injecting ion into a part of (b). Pref. method involves thermal oxidn. of part of (b).
USE/ADVANTAGE - The method is suitable for prodn. of smaller and high density recording head. The head has no **Barkhausen noise** .
In an example, magnetic head was prepd. as follows A 400 Angstrom (A) thick Permalloy **layer** (2) was formed on a **glass** substrate (1) as **MR element** . A pattern (50 microns length and 5 microns width) was formed on 500 A thick FeMn **film** for the bias magnetic **layer** (3) by photolithography. 15 microns length from the both ends were convered with photo resist. Ar ion was injected to the remaining portion (4) of (3) at rate of 10 power14 ions/sq.cm with 50 kV to effect magnetisation, then electrodes (5) of **laminate** of Ti/Au for supplying current were formed on (3) with 10 microns distance, then fabricated to the head by conventional method. As the result the head had 100 of rating output power with no **Barkhausen noise** .
Dwg.1/2
Title Terms: MAGNETIC; RESISTANCE; EFFECT; TYPE; HEAD; PRODUCE; FORMING; FERROMAGNETIC; FERRO; DIAMAGNETIC; **LAYER** ; INJECTION; ION; FERRO; DIAMAGNETIC; **LAYER**
Derwent Class: L03; T03; V02
International Patent Class (Main): G11B-005/39
File Segment: CPI; EPI

14/5/9 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

008220579 **Image available**
WPI Acc No: 1990-107580/199014
XRPX Acc No: N90-083294
Magnetoresistive head **with complementary easy axis permanent magnet - has structure such that similar opposite demagnetisation field is generated in biassing structure as in sense** film
Patent Assignee: EASTMAN KODAK CO (EAST)
Inventor: SMITH N
Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 4903158	A	19900220	US 88225418	A	19880728	199014	B

Priority Applications (No Type Date): US 88225418 A 19880728
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 4903158	A		5		

Abstract (Basic): US 4903158 A

A **layer** of magnetically soft material e.g. permalloy is deposited on a ceramic substrate e.g. fosterite. This is followed by a **layer** of magnetic insulating **coating** of SiO", and of magnetoresistive (MR) sense **film** about 400 Angstroms. Electric bonding pads are added to pass current through the **film** . A thin **coating** of **SiO2** is deposited on the sense **film** followed by a magnetically hard material **layer** of 1000 Angstroms. This is then magnetised permanently.

The structure has the same physical geometry as the MR sense **film** itself, whereby a similar, but opposite, demagnetisation field is generated in the biasing structure as is generated in the sense **film** . Thus, with the two demagnetisation fields complementarily cancelling each other, any tendency of the sense **film** for multi-domain formation is cancelled (or at least lessened), to preclude **Barkhausen noise** without excessively densensitising sense **film** with easy axis field in central region.

USE - Playback of magnetically recorded signals

Title Terms: **HEAD** ; COMPLEMENTARY; EASY; AXIS; PERMANENT; MAGNET; MAGNETORESISTIVE; STRUCTURE; SIMILAR; OPPOSED; DEMAGNETISE; FIELD; GENERATE; STRUCTURE; SENSE; **FILM** ; **BIAS**
Index Terms/Additional Words: **BARK HAUS EN_N** ; NOISE
Derwent Class: T03; V02
International Patent Class (Additional): G11B-005/12
File Segment: EPI

14/5/10 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX

007866764
WPI Acc No: 1989-131876/198918
XRPX Acc No: N89-100443
Magnetoresistive read transducer assembly - exploits enhanced exchange bias field between layer **and transversely biassed ferromagnetic** layer **in intimate contact**
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC); IBM CORP (IBMC)
Inventor: HOWARD J K
Number of Countries: 008 Number of Patents: 008
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 314343	A	19890503	EP 88309575	A	19881013	198918	B
US 4825325	A	19890425	US 87115142	A	19871030	198919	
JP 1213819	A	19890828	JP 88204872	A	19880819	198940	
CA 1306803	C	19920825	CA 572877	A	19880722	199240	
EP 314343	B1	19930811	EP 88309575	A	19881013	199332	
DE 3883146	G	19930916	DE 3883146	A	19881013	199338	
			EP 88309575	A	19881013		
SG 9401510	A	19950317	SG 941510	A	19941017	199522	
JP 7201016	A	19950804	JP 88204872	A	19880819	199540	
			JP 94270862	A	19880819		

Priority Applications (No Type Date): US 87115142 A 19871030
Cited Patents: 1.Jnl.Ref; A3...9045; EP 216062; No-SR.Pub; US 3887944; US 3959032; US 4103315
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 314343	A	E	8		
Designated States (Regional): DE FR GB IT					
US 4825325	A		8		
EP 314343	B1	E	10	G11B-005/39	
Designated States (Regional): DE FR GB IT					
DE 3883146	G			G11B-005/39	Based on patent EP 314343
SG 9401510	A				Previous Publ. patent EP 314343
JP 7201016	A		6	G11B-005/39	Div ex application JP 88204872
CA 1306803	C			G11B-005/39	

Abstract (Basic): EP 314343 A

The **MR head** has a **layer** of soft magnetic material (12) on a substrate (14) sepd. by a nonmagnetic spacer **layer** (16) from a thin magnetoresistive ferromagnetic **layer** (18) of e.g. Ni-Fe alloy. The magnetic field is biased in a direction which is not parallel to the recording medium. The transverse bias field maintains a lienar response mode in the magnetoresistive **layer** (18). A **longitudinal bias** field is produced by exchange coupling between this **layer** (18) and an overlying ultrathin anti-ferromagnetic **film** (20) of e.g. Fe-Mn, creating a single domain state for **Barkhausen noise** suppression.

USE/ADVANTAGE - For reading information signals from magnetic record carrier with high linear density. Produces relatively high exchange bias field is produced between the magnetoresistive and antiferromagnetic **films** , and remains stable during thermal cycling.

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Title Terms: MAGNETORESISTIVE; READ; TRANSDUCER; ASSEMBLE; EXPLOIT; ENHANCE ; EXCHANGE; BIAS; FIELD; **LAYER** ; TRANSVERSE; BIAS; FERROMAGNETIC; **LAYER** ; INTIMATE; CONTACT

Derwent Class: T03; V02

International Patent Class (Main): G11B-005/39

File Segment: EPI

14/5/11 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

004255280

WPI Acc No: 1985-082158/198514

XRPX Acc No: N85-061567

Thin film **magneto-resistive recording head - includes ferromagnetic thin** film **with coupling element to magneto resistive** layer

Patent Assignee: SHARP KK (SHAF)

Inventor: KIRA T; MIYAUCHI T; YOSHIKAWA M

Number of Countries: 003 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 3404273	A	19850328	DE 3404273	A	19840208	198514	B
GB 2146482	A	19850417	GB 843588	A	19840210	198516	
DE 3404273	C	19870122				198703	
US 4639806	A	19870127	US 84577389	A	19840206	198706	
GB 2146482	B	19871231				198801	

Priority Applications (No Type Date): JP 83228125 A 19831130; JP 83167312 A 19830909

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 3404273	A		32		

Abstract (Basic): DE 3404273 A

The heat has magnetic thin **films** (9,17) of high permeability, e.g. Ni-Zn-ferrite, Mn-Zn-ferrite, Sendust power TM, Permalloy power TM, etc., that act as magnetic shielding. Intermediate **layers** of an insulating material (10,12,16) are produced, e.g. **SiO2** , SiN, and

Al2O3.

Premagnetisation is provided by a thin **film** (11), and another **layer** (13) is a magneto resistive element, e.g. Ni-Fe, Ni-Co, etc. A further **layer** (15) of conducting material, e.g. Al, Cu, Au, operates as a conductor to the magneto resistive element. A ferromagnetic thin **film** e.g. Ni-Co, Ni-Co-P, Co-P, Fe2O5 with high coercitivity provides a coupling element with the magneto resistive **film** .

ADVANTAGE - Has high signal to noise ratio.

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Title Terms: THIN; **FILM** ; MAGNETO; RESISTOR; RECORD; HEAD; FERROMAGNETIC; THIN; **FILM** ; COUPLE; ELEMENT; MAGNETO; RESISTOR; **LAYER**

Derwent Class: T03

International Patent Class (Additional): G01R-033/02; G11B-005/30

File Segment: EPI

21/5,K/1 **(Item 1 from file: 348)**
DIALOG(R)File 348:EUROPEAN PATENTS

01543293
Magnetoresistive head and manufacturing method therefor
Magnetoresistiver Abtastkopf und Herstellungsverfahren dafur
Tete magnetoresistive et procede de fabrication
PATENT ASSIGNEE:
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LEGAL REPRESENTATIVE:
Hitching, Peter Matthew et al (74871), Haseltine Lake & Co., Imperial House, 15-19 Kingsway, London WC2B 6UD, (GB)
PATENT (CC, No, Kind, Date): EP 1286337 A2 030226 (Basic)
APPLICATION (CC, No, Date): EP 2002252329 020328;
PRIORITY (CC, No, Date): JP 2001246695 010815
DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE; TR
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS: G11B-005/127

ABSTRACT EP 1286337 A2
A magnetoresistive head (10) including a first magnetic shield, a first electrode terminal (12) provided on the first magnetic shield and having a first width or height, and a magnetoresistive film (14) provided on the first electrode terminal and having a second width or height less than or equal to the first width or height. The magnetoresistive head further includes a second electrode terminal (10) provided on the magnetoresistive film and having a third width or height less than or equal to the second width or height, and a second

magnetic shield provided on the second electrode terminal. Preferably, the magnetoresistive head further includes a plug electrode for connecting the second electrode terminal to the second magnetic shield, and a plug side wall protective insulating film for covering a side wall of the plug electrode.
ABSTRACT WORD COUNT: 137
NOTE:
Figure number on first page: 1

LEGAL STATUS (Type, Pub Date, Kind, Text):
Application: 030226 A2 Published application without search report
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	200309	980
SPEC A	(English)	200309	6657
Total word count - document A			7637
Total word count - document B			0
Total word count - documents A + B			7637

...SPECIFICATION are the finest portions of the MR element.

As shown in FIG. 20A, a magnetic **domain control** film 18 is uniformly deposited. The magnetic **domain control** film 18 may be provided by a high-coercivity film such as a **CoCrPt** film or by an antiferromagnetic film such as a PdPtMn film. After forming a photoresist pattern, the magnetic **domain control** film 18 is etched back by ion milling to obtain a desired shape and thickness of the magnetic **domain control** film 18. As shown in FIG. 20B, an interlayer insulating film 42 of **SiO2**)) or Al2))O3)), for example, is deposited and next planarized by etch-back or chemical...